THE CAUSES OF CHURN IN THE TELECOMMUNICATION INDUSTRY: A SINGLE, EXPLORATORY CASE STUDY ON KENYAN CARRIERS

by

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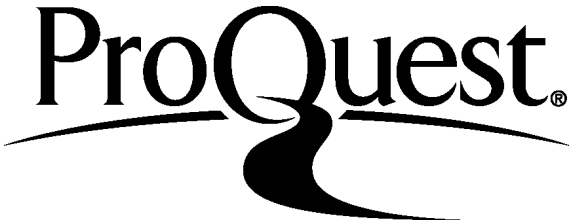

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ABSTRACT

This single explorative case study investigated the causes of churn in the telecommunication industry in Kenya, narrowed down to include only the capital city of Nairobi. The question of this dissertation was split into three sub-questions. The first sub-question investigated the behavioral patterns of customers causing churn. The second sub-question investigated the economic patterns causing churn, and the third sub-question investigated the policies and regulations that cause churn.

Data was gathered from carrier websites and publications from all the four carriers, Safaricom, Airtel, Orange, and YuMobile. Face-to-face interviews with one manager from each carrier were conducted. Field research was gathered from 29 customers who used multiple SIM cards or have changed their carrier.

Findings of this dissertation confirmed findings of most previous literature. Causes of churn differed based on the perspectives. Carriers thought they were mainly in control of churn, whereas customer causes reflected multiple behavioral and economic factors that were not related to the carriers. Findings also indicated that it not possible to investigate a single cause of churn without taking into consideration the effect of all other linked causes. Recommendations for telecommunication leaders have been provided, and a model illustrating the procedure that was followed to solve the problem was also provided. The first step that leaders must take is to identify the true causes of any problem from all the different perspectives before attempting to solve the problem. Future quantitative research is required to investigate the links between causes of churn. Results from this dissertation together with the quantitative research could be used to make customized churn prediction software to accurately predict churning customer.

DEDICATION

This whole dissertation circulated around helping leaders make better informed decisions, especially those in the telecommunication industry. I dedicate it to every leader who is willing to read and learn from the experience of a five year doctoral journey and the extensive in-depth research on the topic of customer retention. I sincerely hope this research comes to the practical aid of leaders and top-managers who are seeking for solutions and answers.

A special dedication goes to my children Julia and Johnson. Although you are too young to read this now, but when you are able to read it, I want to let you know that you are the main reason I did this. I have always tried my best to be a practical live example and a role model for you to follow. Choose your own path, but always try to do the right thing. May Jesus guide you in your lives and always become your leading example.

Dad…. My Hero, you couldn't complete your PhD because of us. So this is also dedicated to you. I have completed your journey, be Proud Dr. Fr. Antonious Halim, YOU did it!

Marianne, my lovely and loving wife, absolutely nothing of all this success could have happened without your unconditional support. Surely no words are enough to describe my love and gratitude, so I'll just say "I love you".

Last but definitely not the least, thanks to all supporting family members who did not stop encouraging me throughout this journey. Special honor to my Mother and Parents-in-law who devoted prayers for my sake, please keep praying, it is working.

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To all managers and participants who willingly took the time to participate in this research and provided their true honest opinions, thank you for helping me complete the last 2 chapters and my journey.

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Introduction

With the right tools, leaders can make the right decisions. As situations become more complex and complicated, leaders carry bigger burdens because their followers look up to them waiting anxiously to see their actions (Rosa, João, & Nunes, 2011). However, when leaders are not equipped with the right information and data, decisions often become arbitrary and baseless (Andolsen, 2008). The purpose of this dissertation was to equip the telecommunication leaders and visionaries with the right set of information to solve one of the problems in this industry known as *churn*. The procedures used in this dissertation can also be used as a sample template that leaders in any industry can follow to investigate similar problems of churn or customer retention.

Customers swooping from one carrier to another, not renewing their contracts, or finding alternative service options are known as churning customers (Jiang, Au, & Tsui, 2007). The problem of churn has caused considerable economic and financial losses and despite the attempts to resolve the problem, churn still remains a critical problem for *Global System for Mobile Communication* (GSM) carriers. Churn prediction software was developed as an attempt to solve the problem (Datta, Masand, Mani, & Li, 2000). Although the software's results are to a great extent accurate; nevertheless, the software uses statistical equations to predict probabilities of future churn only without any clear indications of the causes of churn (Jiang, Au, & Tsui, 2007). The purpose of this dissertation was to find and analyze the causes of churn in hope that leaders and managers in the telecommunication industry will make use of this research to formulate feasible solutions to the problem.

Because change is a fact of life, churn is becoming a problem not only in the telecommunication industry but in retail, service sector, and any industry that faces competition and market saturation (Ginn, Stone, & Ekinci, 2010). Change management becomes inevitable; but making abrupt changes without knowing the causes of the problem is a terrible mistake (Stanleigh, 2013). This qualitative, explorative, single case study should be of support to the telecommunication industry because it identified the causes of churn in Kenya. In addition, the methodology used in this dissertation could be considered as a road map for leaders to follow the steps done in this case study and to apply these procedures in identifying the causes of many other problems.

The following sections will provide an overview of the problem and the method of research used. This is followed by an overview on the available literature and research findings on the problem. The survey method, population, sample, and geographical boundaries will follow as the chapter concludes with definitions of technical terms.

Background

Telecommunications has become the most crucial and influential industry in determining the development stage of any country and its economical advancement (Ahn, & Skudlark, 2002). The telecommunications industry is undergoing high speed of advancement that mandates equivalently appropriate and prompt actions (Shahraki, & Abu Bakar, 2011). *Change* has become a key word in the telecommunication industry. Leaders have to react fast enough to make urgent and immediate, yet informed decisions that are mandatory for such turbulent times. Fierce competition in the telecommunication industry is affecting the leaders' decision (Zhao, & Tse, 2012). Leaders are thus under pressure to act quickly without the availability of sufficient data (Miller, Tsoka, &

Reichert, 2010). Highly advanced tools such as churn prediction software have been developed to attempt to solve the problem of churn, but have provided insufficient information (Datta, Masand, Mani, & Li, 2000).

The fast flux in the telecommunication industry led to the evolution of many problems such as intensive capital investments, lower returns on investment, and fierce competition over narrowing frequency range (Sabat, 2005). Such problems are recently developing into complications resulting from price wars between competitors and poor services that are affecting the economy (Country Watch, 2013). Such issues were never considered in previous eras where the technological development had not been as fast or as complicated.

Several research studies have been done on churn. Ranaweera (2007) asserted that churn rate increases within low to middle-income classes. Joo, Jun, and Kim (2002) described promotions as the main cause of churn. Some considered churn as a natural consequence of maturity of the telecom markets resulting in cutthroat competition (Jahanzeb, & Jabeen, 2007). Masssnand, Datta, Mani, and Li (1999) looked for prediction methods that would identify the churning customer before they churn, yet for all the previous researches, empirical evidence was not provided. Literature on churn in the African telecommunication industry remain scarce and with insufficient supporting research.

Customer churn studies fall under two categories: descriptive and predictive. Descriptive studies, similar to this dissertation, aim at investigating the causes of churn, whereas predictive studies, aim at finding a model to predict churning customers (Jahromi, Sepehri, Teimourpour, & Choobdar, 2010). Churn prediction software have

been developed to predict customers' probabilities of churning. These software depend greatly on statistical data gathered from the carrier's database; thus the predictions are based only on users' usage of the network (Datta, Masand, Mani & Li, 2000). Some of the software supporters stated that the prediction rates were to a great extent accurate (Antipov, & Pokryshevskaya, 2010) yet they remain with no clear indication of the causes of churn (Jiang, Au, & Tsui, 2007).

Just like any other industry, research on the telecommunication sector relates to the harmful effect of churn and the financial benefits of retaining existing customers (Ball, Coelho, & Vilares, 2006). Despite that some consider churn as a natural effect of competition (Roos, Gustafsson, & Edwardsson, 2005), churn remains a worrying problem for the telecommunication industry. On the other hand, Ranaweera (2007) suggested that churn was not a problem at all and that attempting to retain long term customers should be replaced by searching for more profitable segments. Customers will always look for value for their money, and if the wireless carrier they are currently using does not provide them with this value, churning becomes a valid option. This may sound simple and obvious, but from preliminary interviews which aimed at investigating if the problem of churn does really exist, none of the carriers in Kenya knew what their customers value most. Carriers confirmed that churn is a big problem, nonetheless managers had no idea why their customers churn and instead of attempting to find empirically justified cause, they blamed it on competition that often results in entering a price war that hurts both the carrier and their customers.

According to Ginn, Stone, and Ekinci (2010) research showed that one of the most important aspects of customer turnover is managing service failures. Customers

who found that the service was unreliable tended to churn more, thus customers were not exclusively following price promotions but were rather looking for value (Ginn, Stone, & Ekinci, 2010). Although some carriers try to add value by technological advancement and providing new services to niche segments, others see doubling the airtime for the same amount of money as a great marketing strategy.

Finally, because managing change starts by finding the cause, failure to do so will result in failure to implement satisfactory change. To investigate the real causes of churn, behavioral patterns had to be studied. Using statistical churn prediction software may temporarily attempt to solve the problem, but without knowing the real causes of churn the problem will remain a mystery. This will result in leaders making assumptions and predictions without certain empirical data that justifies their actions to retain their customers.

Problem Statement

Churn is a term that was recently developed in the telecommunication industry indicating the swap of customers from one telecommunication carrier to another (Zorn, Jarvis, & Bellman, 2010). The antonym of churn is commonly known as customer retention. Churned customers either abandon the network completely or keep their phone number while changing their network service provider (Park, Kim, & Lee, 2007), another option that has been added with the advancement of cell phone technology is to use multiple SIM cards from different carriers on one phone simultaneously. The purpose of this dissertation was to investigate the causes of churn in Kenya's telecommunication industry.

General Problem

Kenya currently has four telecommunication GSM carriers and over a dozen voice and data service providers (Communication Authority, 2013a). The newest carrier was recently sold to incumbent carriers but the brand remained unchanged for now (Essar group, 2015) so it is still considered a valid competitor in this dissertation. In such a small market with a population of 38.6 million (Kenya National Bureau of Standards, 2011) the competition between telecommunication carriers and service providers has turned into a price war (New Vision daily, 2011; Katsianis, Gyurke, Konkoly, Varoutas, & Sphicopoulos, 2007). Price reduction is one of the main marketing methods of attracting customers willing to churn. Promotions such as free call plans in which customers only pay an equivalent amount of $12 per month and get to talk free on the same network have become common and results in affordable telecommunication services (Mugabe, 2010). Such price reductions likely influence existing customers to change their calling plans to join the promotion. For non-customers who use different carriers, they have the choice of joining the promotion either through number portability or by purchasing a new SIM card (Joo et al., 2002). When the promotion of a carrier ends, another carrier follows the same path with a similar promotion, which leaves customers sometimes with as many as three or four different phone lines using the one with the best promotion.

Specific Problem

Annual churn rate ranges from 21 to 70% in the Internet industry (Jiang, Au, & Tsui, 2007; Qian, Jiang, Tsui, 2006; Network World, 2001; Kolko & Gordon, 2002; Keaveney & Parthasarathy, 2001) and from 20 to 46% in the wireless telecommunication industry (Gürsoy, 2010; Xevelonakis, 2008; Chen, Zhang, Hu, & Fu, 2007; Wireless

Review, 2000). This means a wireless carrier could be losing almost half its customers, which results in a devastating drop in turnover and profits. Leaders thus need to understand the causes of churn to make appropriate decisions, especially for marketing, promotions, and call plans. The results of this research could affect greatly the financial performance of the telecommunication carriers by reducing churning customers (Aker, & Mbiti, 2010).

Based on the Communication Authority of Kenya (CA) quarterly reports between June and September 2012 (CA, 2013 a) Safaricom, the incumbent carrier was only able to increase its subscriber base by 1.1% whereas Orange subscribers dropped by 0.9% as shown in Table 1, also in a comparison between two consecutive quarters it appears that Safaricom has lost its revenue to new market entrants as shown in Table 2.

Table 1

Number of Subscription per Carrier (CA, 2013a)

Name of operator	Sep-2012			Jun-2012			*Quarterly variation (%)*
	Pre-paid	*Post-paid*	*Total*	*Pre-paid*	*Post-paid*	*Total*	
Safaricom Ltd.	19,045,713	175,496	19,221,209	18,853,071	153,910	190,006,981	1.1
Airtel Networks Kenya Ltd.	4,997,807	116,189	5,113,996	4,799,309	114,751	4,914,060	4.1
Essar Telecom Kenya Ltd.	3,001,808	1,90	3,003,298	2,658,324	1,323	2,659,647	12.9
Telkom Kenya Ltd. (Orange)	3,089,814	4,465	3,094,279	3,119,368	3,383	3,122,751	-0.9
Total	30,135,142	297,640	30,432,782	29,430,072	273,367	29,703,439	2.5

In April 2011, CCK introduced the Mobile Number Portability, a service that allows the consumers the flexibility and the convenience to retain subscribers' numbers upon switching service providers. During the quarter under review in Table 3, there were a total of 6,646 in-ports up from 2,407 in-ports recorded during the previous quarter, representing an increase of 176.1%. The number of In-ports represents the actual churners who have changed their network through number portability services indicating a clear significance of the problem in Kenya.

Table 2

Voice Traffic in Minutes by Carrier (CA, 2013a)

Period	*Name of operator/ Indicator*	*Safaricom Limited*	*Airtel Networks Kenya Limited*	*Essar Telecom Kenya Limited*	*Telkom Kenya Limited (Orange)*
Jul-Sep 12	On-net	5,092,967,502	385,690,177	519,000,275	46,187,903
	Off-net	281,943,508	492,476,715	155,886,263.2	31,132,439
	Total	5,374,911,010	878,166,892	674,886,538	77,320,342
	Market share (%)	76.7	12.5	9.6	1.1
Apr-Jun 12	On-net	4,758,038,227	279,303,450	445,771,772	17,450,032
	Off-net	245,494,922	430,718,843	129,887,115	35,603,163
	Total	5,003,533,149	710,022,293	575,658,887	53,053,195
	Market share (%)	78.9	11.2	9.1	0.8

During preliminary surveys aiming to investigate whether the problem of churn does exist in Kenya, when managers in the telecommunication industry were asked, they all acknowledge the existence of the problem of churn. None of them, however, had solid data of what the causes are, despite their obvious assumptions that price was the biggest cause which was based only on personal assumption or intuition. Moreover, based on

literature research countries with similar demographics such as Nigeria (Oghojafor, Mesike, Bakarea, Omoera & Adeleke, 2012), Ghana (Sey, 2009) and India (Tenhunen, 2008) which are very close in nature to Kenya seemed to suffer from the problem of churn. Furthermore, Sutherland (2009) investigated ownership of multiple SIM card holders and ranked Kenya as the second highest country in Africa with a rate of 25% of the customers using dual or multiple SIM cards.

Table 3

Number of Churners Who Used Mobile Number Portability (CA, 2012)

Period	*Jan-Mar 12*	*Oct-Dec 11*	*July-Sep 11*	*Apr-Jun 11*
Number of In-ports	6,646	2,407	1,929	36,244
Variation (%)	176.1	24.8	-94.7	-

Affected Population

The Communication Authority (2013a) reported that the number of mobile customers were 29,703,439 with a tele-density of 77.2%. This means almost eight out of 10 people hold a cell phone. However, Country Watch (2013) reported that the total number of mobile phones in use were only 1,590,800 according to their own census. It is thought that this difference is caused by dual and multiple SIM holders, which were reported to be more than 25% (Sutherland, 2009). Although in qualitative case studies the number of interviews does not have to be of certain percentage as in quantitative research, it was estimated that between 20 to 50 interviews were necessary to explore this phenomenon of churn and achieve data saturation as further explained in chapter three. Data gathering ended at 29 interviews as saturation had been achieved.

Although any SIM card holder has the possibility to churn, nevertheless, the sample population in this dissertation only included customers who hold two or more GSM lines or have used other carriers different from the one they are currently using. Single SIM card holders may have their reasons for sticking with one carrier; however, because they had not experienced different carriers they would have less input and information that was necessary for this research. Thus it was more feasible to investigate churn with people who have witnessed and practiced churning. Those who use multiple carriers or who have changed their carrier were able to tell their story on why they churned or why they are using multiple SIM cards.

The total mobile phones in use are 29,703,439 according to the Communication Authority (2013a); however, unfortunately there is no statistical data found on the numbers of mobile customers who use more than one carrier. It is therefore just estimated that 10-25% of this population own at least two lines (The Economist, 2009; Sutherland, 2009). Thus in theory the population using multiple carriers ranges between 2,970,343 and 7,425,859 people. Furthermore, all minors within this percentage were excluded from this research to avoid the complications of guardian approvals as the time allocated for the data collection would not have permitted seeking such approvals. No statistical data indicating the percentage of minors using mobile phones in Kenya was available at the time of publishing this dissertation.

Purpose

Although the problem of churn does exist and customers do actually swop from one carrier to another, the true effect is variable and is mainly calculated based on the financial returns of carriers (Ranaweera, 2007). The literature does not provide sufficient

evidence from the customers' perspective on the problem (Jahromi et al., 2010). Thus whether churn is good, bad, or neutral remains a respective point of view. In such a case, managing change would be baseless and unjustified and could lead to disastrous and unknown results. If the causes of the problem are not clear then change cannot be implemented or measured.

Although almost all literature considered churn as a negative phenomenon because it reduces the financial return and profitability, only two authors considered it a positive phenomenon because it is a way of getting rid of unwanted customers (Datta et al., 2000; Ranaweera, 2007). Many other researchers just investigated the relationship between churn and different factors without referring to the actual effect of churn as explained in details further in this chapter and the following. Thus the problem of churn exists but why it exists and how it affects the telecommunication market whether positively, negatively, or does not have any effect is still debatable. Some authors acknowledge that their research on one specific factor causing churn was insufficient to claim they had found a solution (Ferguson, & Brohaugh, 2008). This theoretical gap offered an opportunity for qualitative research to investigate the causes of the problem.

By determining the causes of churn on telecommunication carriers, it will be possible to consider the effect of churn when making important decisions such as promotion plans and network expansion. Although churn is important it could be a fad that is associated with promotions and the introduction of new services. Moreover, Ranaweera (2007) stated that churn could be an effective way of losing unprofitable customers. Understanding the causes of churn could help leaders know how to deal with it and to know whether to consider it a positive or negative phenomenon.

Previous research investigated call plans (Wong, 2009; Wong, 2011a), customer loyalty (Aydin, & Özer, 2005; Veloutsou & Moutinho, 2009), customer relationship management (Jurisic, & Azevedo, 2010), quality of the service (Reichheld, & Sasser, 1990; Myron, 2004), mobile number portability (Shin, & Kim, 2007; Sutherland, 2007) profitability (Xevelonakis, 2005), customer perception (Amitava, 2001), and marketing strategies (Sabat, 2005) and their relationship with churn. However, researchers hypothesized that the above mentioned factors do affect churn and tested these factors without first knowing the actual causes of churn. In addition most of them tested single factors without taking into consideration the effect of complex customer's behavioral characteristics which were discussed in details in the following chapter.

Christensen, Johnson, and Turner (2010) related that the purpose of qualitative research was to describe and understand particular behaviors of groups and individuals in particular contexts. The purpose of this qualitative case study was to explore and understand the causes of churn in the telecommunication industry, not by testing factors but rather by interacting with customers to know why they churn. This dissertation investigated what all the previous literature research failed to understand that the problem is not about the effect of churn but why it occurs. The question of why it happens is far more important and can only be answered via a qualitative case study method which none of the previous research used.

The population included any SIM card holder within the geographical borders of Kenya which came to an estimated population of 38,610,097 (National bureau of statistics, 2013); nevertheless to narrow the research, the chosen population included only adults holding multiple SIM cards which were estimated at 25% of the total cell phone

users coming to a total of 7,425,859 (Sutherland, 2009). Further narrowing of the geographical scope to include only people in Nairobi was necessary due to inability to travel to conduct interviews due to financial and time constraints. The population of Nairobi was reported to be only 3.1 million people (National bureau of statistics, 2013). Onwuegbuzie and Leech (2005) suggested that for qualitative case studies, a sample of not less than three people is required. To verify the validity of the data collection instrument, a pilot study was conducted with ten conveniently sampled, and carefully chosen multiple SIM holders from different demographic categories; this was done via a one-on-one, face-to-face interview with the customers. Then a sample of 20 to 50 conveniently chosen customers was necessary for primary data collection. The sample was filtered using two screening questions to exclude minors and those who have not churned. Interviews were only done in English thus non-English speaking Kenyans were not invited to participate.

Moreover, for enhanced triangulation, face-to-face, open-ended interviews were also conducted with one manager from each carrier to understand their viewpoint on the problem of churn and how it affects their businesses. Furthermore, literature research, secondary data collected from the websites and publicly available data, and documentations from different carriers and the regulator were all used for comparing the primary data gathered from the field. Thus, there are a total of three different data collection instruments in this dissertation.

Geographic Location

With the expansion of new telecommunication services, such as mobile money, the usage in rural Kenya has become common (The economist, 2009). Nevertheless, it

was reported that customer's habits and behavioral differences do not reflect much influence on the telecommunication industry (Sey, 2009). Fortunately, all the headquarters of the four carriers and the governing regulators are in Nairobi, the capital city of Kenya and thus Nairobi was the center for conducting the research. Customer interviews were conducted in Nairobi only. Despite that the network coverage of carriers had reached all major cities and most rural areas in Kenya (Safaricom, 2012), for convenience purposes the sample only included subjects from within the capital city. This resulted in a limitation in this research on geographical scope. Thus the sample can only be a representation of the Nairobi population which amounts to 3.1 million and does not fully represent the views of other smaller towns or villages in the country totaling to 38.6 million (National Bureau of Statistics, 2013). This dissertation might also be very useful to neighboring East African countries which have an almost identical nature of their telecommunication industry and similar demographics and cultural values.

Significance of the Study

Because of the unavailability of research on churn in East Africa, leaders in the telecommunication industry have been making decisions based on incomplete information regarding churn. Churn prediction software was also not being used in making decisions regarding promotions, marketing, network expansion, and policies which would affect the churning customers (Masand, Datta, Mani, & Li, 1999). Thus managing change had become an unjustified process with no theoretical framework to govern it.

Churn prediction is becoming more difficult because of the increasing factors affecting churn, such as the change in culture, number of customers, number of carriers,

and other factors that change from one country to another and from one telecommunication carrier to another (Tamaddoni, Sepehri, Teimourpour, & Choobdar, 2010). Unfortunately, behavioral factors are hard to incorporate into churn software because of the challenge that is associated with quantifying behavioral factors (Geetha, & Kumari, 2012). Thus, it is challenging to replicate the same prediction software program to work for all the carriers. This gap in research had led to the loss of a great number of customers, which eventually affected the financial and operational performance of telecommunication carriers. This dissertation provided a list of the possible factors causing churn and suggested ways to avoid it within the Kenyan telecommunication industry.

Significance of the Study to Leadership

Leaders carry heavy burdens in envisioning new profitable future for their organizations (Sitkin, Lind, & Siang, 2009). They are required to make many decisions every day, most of which are long-term and require a substantive amount of investment especially in the telecommunication industry. Churn is a direct problem that is forcing change on to the industry and to manage such change forced by the outside environment and customers, leaders must be aware of the causes of the problem to be able to solve it. In addition, leaders must be able to understand the process in which such kinds of problems are solved, and to follow structured steps in change management rather than reacting with policies based on assumed and unjustified causes.

Furthermore, leaders must also ensure that their organizations are providing value to their existing customers with great customer service. When the rate of churning customers reaches a significant amount of the organization's customers this becomes

alarming and signifies great failure. Leaders are responsible for dropping the churn rate, increasing customer retention, and at the same time providing the vision for the organization that aims to improve its customer base and profitability. This research should aid leaders in envisioning the right set of choices that will reduce the churn rate and thus improve financial returns and economic status.

Depending on the method, some qualitative research is meant to create a theoretical framework as an end product of the research. The results of this dissertation will aid leaders to build up practical applications on the model presented and give leaders the opportunity to test it in different situations. Despite the limitations of this dissertation, the model presented is generalizable only within its contingent situations and geographical region.

Nature of the Study

The questions of why, how, and what are best answered using qualitative research. Qualitative research is used when in-depth views on a particular problem involving psychological phenomena are involved (Cooper & Schindler, 2008). It was therefore necessary to use a qualitative case study to answer the question "*what are the causes of churn*?" Previous quantitative researches identified several factors and their effect on churn. Nevertheless, none of the previous research addressed the complete set of factors; in fact, many of the previous researches had considered their inability to monitor all factors as a limitation of their study (Antipov & Pokryshevskaya , 2010; Ngai, Xiu & Chau, 2009; Datta et al., 2000; Jiang, Au, & Tsui, 2007). Also, why and how the different factors affect churn remains a mystery. Thus, in this qualitative case study no

correlation between assumed factors was investigated, but rather identified the full range of factors (causes) that may be causing customers to churn.

This dissertation used a single explorative case study method with data triangulation. Statistical data was collected from publicly available published data from carriers and regulatory bodies, in addition, direct interviews with one manager from each carrier was conducted to better understand the viewpoint of the carriers and the regulators on the problem of churn. A pilot study conducted on ten convenient samples representing the different demographics in Kenya aided in amending the data collection instrument. The data acquired from pilot interviews were not considered part of the data collected for analysis. Pilot interviews were a necessary start in case studies to ensure the data collected was useful and served the purpose of the dissertation by improving the validity and the reliability of the data collection instrument (Woodside, 2010).

Field data that represent the customers' viewpoints was collected through interviewing conveniently sampled participants. The sample was set to be between 20-50 participants that theoretically represented the overall population under study. One-on-one interviews using open-ended qualitative questions were used to acquire necessary knowledge that could not be gathered through quantitative questions. Following the pilot interviews, 29 face to face interviews were conducted. Starting with two screening questions to ensure that the participants were adults and were using dual or multiple SIM cards or had previously churned. Geographical location was limited to Nairobi region only where the research was conducted. Of course, the higher the diversity of the sample, the better it would represent the whole population, however due to time and financial constraints this research was limited to a convenient sample chosen from within Nairobi,

the capital city which represents approximately eight percent of the overall population of Kenya.

All the qualitative interviews involved in this dissertation including the pilot interviews, the face to face interviews, and the managers' interviews aimed at gathering as much in-depth information about the problem of churn as possible, thus the need for qualitative questions. *How* and *why* questions were asked frequently to ensure that the participants had stated all what they have to say regarding the matter. The gathered data was then analyzed using NVivo10® software which was used to group the collected data into nodes, classifications, and frequency tables, the results were then tabulated and sorted to make them easier to compare and analyze.

Qualitative case studies are known for their descriptive and explanatory nature, they are used when quantitative data has no meaning to the body of knowledge (Ambert, Adler, Adler, Detzner, & Ambert, 2008) Churn prediction software can predict the probability of churning customer, however they fail in describing the reasons of churn. An example is when a customer is travelling for a long duration outside Kenya, the customer service of the carrier calls and asks if the customer is satisfied with the service noting that the customer's usage had dropped. There is a high probability that the churn software had identified this customer as a possible churner because of the lower usage during the travel period, yet the software might not have recognize that the main reason was that the customer had a long travel plan.

During preliminary surveys conducted by the researcher with wireless carrier officials to investigate the problem of churn, all the managers noted that they understand that the rate of churn is quite high. However, they did not have any justified reasons

causing churn. Thus telecommunication leaders attempt to retain their customers by providing different strategies. Some carriers roll-out extensive marketing plans like Safaricom, Airtel sees value in geographical expansion through their regional presence, others concentrate on a specific segment like Orange Internet, whereas YuMobile sees promotions and price reductions as the best method of providing value to their customer thus slashing its prices dramatically to attract customers. Different organizational policies are implemented to win and retain customers. Nevertheless, they do so without the presence of accurate information on what are the causes of customers moving away.

Identifying the Research Method

There are some factors that could have caused and facilitated churn that were uninvestigated in previous research, such as multiple carriers operating in a small region as in the case of Kenya, cultural habits of the customer, the effect of locality and heritage of carriers, the effect of education and literacy, stability of the carrier, and others. A qualitative exploratory method was thus required to find the causes of churn. Finding the causes of churn may help leaders make more informed decisions resulting in carriers retaining their customers and avoiding financial loss.

Research Method Appropriateness

Because there is no theory in place, nor are the hypothesized causes previously researched in literature been sufficiently linked to any psychological factors, previous quantitative researches were incapable of providing clear answers about the causes of churn. A qualitative method must be used to investigate the psychological and human factors behind the problem and to achieve an in-depth perspective on the possible causes (Gill, Stewart, Treasure & Chadwick, 2008). Although previous researchers considered

income status and promotions to be the causes of churn (Ranaweera, 2007; Joo et al., 2002), however Wong (2011a) stated that churn research is incomplete because customer churn may be influenced by a wide range of factors. Some factors such as income level, educational background, and marital status had never been investigated due to unavailability of the data. Thus data collection involved open-ended qualitative questions to capture as many factors relating to the problem.

A qualitative exploratory case study goes beyond what other superficial methods achieve as it involves in-depth investigation of the problem from different perspectives (Flyvbjerg, 2006). A qualitative case study gives the comprehensive story behind why the problem of churn occurs and not just mere representations of figures or correlations between churn and assumed causes (Thomas, 2011). Although qualitative research was criticized by natural scientists for their poor scientific foundation, they were later justified to be a qualified approved method for studying behavioral patterns and grounded theory (Tellis, 1997). Despite the high population under study which was reported to be about 29,703,439 people according to the statistics provided by the Communication Authority (2013a); using qualitative methods does not require a high sample of the population because the case study was aimed at thorough investigation and identification of certain aspects. The different aspects of the problem were identified and justified by triangulation thus the case study was deemed fit (Golafshani, 2003).

Qualitative methods are theory generating methods that provide ample room for future quantitative research to prove or disprove the theory (Yin, 2009). A case study would generate particular information about a certain case and might be difficult to generalize beyond that specific case. This again leaves room for more research on other

similar cases. Case studies can be single or multiple; yet even multiple case studies do not serve total generalizability. Thus the generalizability of case studies whether single or multiple are made to theory not to sample (Tellis, 1997).

Qualitative methods usually do not use preexisting data collection instruments that are readily available for use. In most cases, if a commonly used data collection instrument is readily available, then the theory is already in place and a quantitative research is mandated (LeCompte, 2000). In other words, in qualitative research the data collection instrument is often developed by the researcher to suit the specific needs of the research. In this case study two data collection instruments were developed for use to suit the specific purpose of this case study, an open-ended interview as shown in appendix B, and an open-ended face-to-face interview in appendix A.

Pilot interviews are necessary to rectify and amend the data collection instrument to its best version (Gill, Stewart, Treasure & Chadwick, 2008). The pilot interviews assisted in refining and revising the interview questions. The final revised version of the interview after necessary amendments was used as the data collection instrument. Data collection used triangulation for more reliability and validity (Baker, 2006). This was achieved when a combination of data sources were used, the consistency of the answers from the three different sources showed that the research is reliable. Triangulation also served as evidence from multiple sources for further justification of the reliability of the data collection instrument.

Research Design

This dissertation used a single snapshot, local, exploratory, theory-building case study design (Thomas, 2011) that investigated the causes of churn from all different

perspectives. Thus, as part of this research, an interview was generated and tested for credibility, integrity, and generalizability using ten pilot interviews (Golafshani, 2003). Further data sources such as, one-on-one interviews with managers of different carriers and secondary data provided by carriers enabled triangulation of data that increased the validity and reliability of the data collection instrument (Eisenhardt, 1989).

Research Design Appropriateness

Explorative case studies best suit the subject of this dissertation as the investigated causes have more psychological factors that are impossible to investigate using quantitative methods. Other qualitative designs such as phenomenological methods were also inappropriate due to their concentration on the phenomena rather than the human beings causing the phenomena (Lindseth, & Norberg, 2004). Thus it was necessary to have a case study to investigate the problem from all different perspective and involve the different stakeholders such as the service provider and the customers. This case study also analyzed data on three different perspectives: the psychological factor, the economic factor, and the service provider policies.

Face-to-face interviews were quite reliable in gathering information quickly and cheaply (Brennan, Benson, & Kearns, 2005). The interview started with a screening question to check if the user had dual or multiple SIM cards, or if the carrier had been changed at any point in time, if not the interview was terminated. Face-to-face customer interviews enabled the gathering of a substantial amount of information in addition to recording nonverbal cues and body language which added emphasis to the answers. Nevertheless, direct interviews required the physical presence of the participants in a physical location and a dedicated time slot from both the researcher and the participant.

The data collected from interviews used open-ended questions and were correlated with the statistical data gathered from the carriers and regulators.

Publicly available information such as the pricing schemes and call plans for each of the four GSM networks operating in Kenya were collected from publications and online information available on the carriers' websites (Appendix E). The gathered data were analyzed and used to test for conformity of answers gathered from manager interviews. An open-ended, one-on-one, interview with top management of each carrier was a redundant method of collecting relevant data and presented the perspective of the different carriers on the problem of churn.

To investigate the problem in details, different point of views and perspectives were considered. Unfortunately, statistical usage information of customers was unavailable due to security and confidentiality of such information. Thus, direct interview with customers were done. To increase rigor of the data collection instrument, ten one-on-one qualitative pilot interviews with customers of different carriers were conducted. The pilot interviews were used to refine the interview questions to ensure that the participants fully understood the questions, this added rigor to the data collection instrument; however, the data collected during pilot interviews did not account as one of the legs of data triangulation. The last stage of this dissertation was the qualitative open-ended customer interviews that were conducted to gather information about how churn was perceived from the customer point of view and investigated the suggested methods of preventing it.

The conveniently selected sample of participants was chosen carefully to be a good representation of most demographics and economic status available in Kenya.

Consent forms to participate in this research were read to the participants and were signed prior to starting the interviews. The collected data reports were coded to conceal the names of participants and thus preserving the privacy and security of the participants. The coding method is explained in details in chapter three.

Direct face-to-face customer interviews were conducted for field data gathering. An unbiased, open discussion, interview was used to collect data from a convenient sample that represented the various demographical differences representing the wider population. The interviewer started with two filter questions to identify that the participant is an adult and uses several carriers or has changed their service provider, if not, the interview was canceled. The participants had to give their written consent to participate before the interview started. Based on the participant's consent, the interview was audio recorded using a smart phone using free integrated recording software installed on the phone. At the beginning of the interview, the interviewer informed the participants about the research purpose and that it was not an advertisement for any product or service nor did the researcher represent any carrier in the market (Brennan, et al., 2005).

NVivo10® software was used to analyze the qualitative answers gathered from both the manager interviews and the customer interviews. NVivo10® was also used to check for any misleading or conflicting data by running matrix coding queries. Qualitative answers had to be analyzed using NVivo10® because qualitative responses produce richer information through in-depth analysis of the qualitative questions (Gregory, Armenakis, Moates, Albritton, & Harris, 2007). The qualitative data was analyzed through NVivo10® software components such as comparisons, queries, word

frequency, node classifications and other qualitative analysis tools. Qualitative answers were organized into groups and categories by comparing and contrasting answers, and by mixing and matching them using rules to make comparisons possible (LeCompte, 2000).

Qualitative research does not require random sampling but rather an inclusive sample, thus a convenience sample based on the researcher's accessibility to recruiters and time was the determining factors. Nevertheless a major consideration in the samples of the participants chosen was to try to choose as diverse demographics as much as possible. Choosing participants from different fields, in different age groups, from different economic status, of different gender and tribes, served the generalizability of the dissertation because participants represented the different segments of the community (Christensen, Johnson, & Turner, 2010). The interviews included one open-ended interview with a manager from each carrier. In addition, ten pilot interviews with customers from different networks were conducted to improve and test the data collection instrument's reliability while excluding the data collected from pilot interviews from the analysis. The main data collection instrument which is primarily a qualitative open-ended face-to-face interview was supposed to be conducted on 20 to 50 customers of different carriers or until saturation of data was achieved (Guest & Johnson, 2006). However, a balance between cost and accuracy was also sought (McDaniel & Gates, 2007). Thus if data saturation had not been achieved by the end of the 50 interviews, a limitation would have been considered on this research and room for further research would have been available. However, during the interviews repetitive answers were gathered and saturation of data was evident after 29 interviews, thus gathering of information and further data collection was stopped to reduce the cost implication.

Research Question

The research question was: *What are the causes of churn in the wireless telecommunication industry in Kenya?* However, this question was too broad and requires breakdown into several smaller sub-questions. To study the causes of a phenomenon or a problem it must be viewed from different perspectives. The different sub-problems were realized in the following sub-questions.

The first sub-question was *what are the behavioral patterns that cause customers to churn?* This sub-question addressed the reasons for holding dual or multiple SIM cards, the frequency of swooping between the different networks and the loyalty to a specific brand. Customers differ in their evaluation of value, some saw it as the quality of service, and others based their choices on the lower pricing. All the aspects related to churn was evaluated using open-ended questions that attempted to understand behavioral reasons for churning. Qualitative research was the best and probably the only way to have evaluated behavioral and sociological phenomena (Wainwright, 1997).

The second sub-question was *what is the effect of economics on churn?* This question investigated the economic patterns that could possibly affect churn such as the average monthly usage per person and the amount of usage during promotions. The economic status of the customers was also considered an important factor. It was not expected that financially capable people would churn as much as financially struggling customers (Ranaweera, 2007). The effect of marketing was also included in this objective as marketing campaigns are usually known for their effectiveness in attracting customers.

The final sub-question objective was based on the carrier itself. The question was *what is the effect of the carrier policies and decisions on churn?* Internal organizational

policies (Katsianis, et al., 2007), quality of service (Reichheld, & Sasser, 1990), types of products and bundles (Withiam, 1999; Myron, 2004), in addition to network advancement (Harno, et al., 2009) were thought to have direct effects on churn. This might not be clear to leaders as they kept on using cut-throat promotions and indulged in endless price war games with competitors.

The research questions covered a wide scope, and the interview was open to any comment as in any qualitative research. Because there were no restricting variables, the research aimed to finding any and all causes that could lead to churn. Literature research helped identify a few causes of churn; however, during open-ended questions more causes were identified and investigated further. This research was most useful because it identified all factors that cause churn in Kenya. Further quantitative research will be required to investigate the percentages of each cause and the links between the different causes using statistical analysis.

Unlike quantitative method research that follow a specific theory and investigates different variables using hypotheses, this qualitative research generated a model representing the interlinked causes of churn that can be used as a theory for further research to start from (Christensen et al., 2010). This theory is thought to indicate all different causes and their extent of influence on churn. A mixed research method could have been very beneficial for this dissertation where the identified causes would have been tested using quantitative statistical methods (Wuest, 2011). However, due to time and financial constraints this research only attempted to investigate and identify the causes of churn using a qualitative case study method while leaving the room for future

research to further investigate the accuracy and the correlation between the variables and churn.

Conceptual Framework

Much research about churn had been conducted, but none of them attempted to understand the causes of churn. There is no theory or justification for the perceived causes that were investigated in previous quantitative research. Research studies investigated different perceived causes of churn, some tested network quality and performance, price, customer service, marketing, plans, technical advancement, and coverage as shown in chapter two. Further research even tried to combine a few causes together indicating that service quality and price both affect the service value (Ginn et al., 2010). Other research stated that customer's behaviors, network performance, and financial performance were very interlinked to the extent that they could not be characterized in isolation (Amitava, 2001). The uniqueness of this research was that it investigated the causes of churn in-depth from two different perspectives of the carrier and the client.

Research Theoretical Area

There is no theoretical work provided, yet most published work, if not all, depended on personal perception without a theory to follow. Individual research investigated one, two, or maximum three factors that affect churn, but no theory was provided on what the causes of churn were. Thus all existing results and findings had not been based on a qualitative research that would provide a theoretical framework to follow. Previous researches tested hypotheses based on assumptions rather than an existing theory. This research filled in this gap by identifying the causes of churn using

qualitative methods. After the causes were presented, further quantitative research can be done to evaluate the relationship between the different factors that were identified.

How the Study Fits Within Other Research in the Field

All previous researches found in literature were quantitative in nature, and all but one were conducted solely on post-paid customers which represent less than 10% of the overall customer base (Jahromi et al., 2010; CA, 2012). This dissertation took an integral approach by investigating both the post-paid and the pre-paid customer base through field research rather than statistical information gathered from carrier databases. This research not only completed the available yet incomplete research but also helped make much sense of previous research hypothesizes by linking previous research to a theoretical framework.

Churn prediction is a new term that became popular in the telecommunication industry; however, this problem is not new. Customer retention had been discussed for decades in marketing journals, business journals, and even manufacturing journals. Churn is the antonym of customer retention, although different terms and names of the problem exist, the problem remains in existence. Customer retention strategies had been developed in several industries, most of which are replicable in the telecommunication industry (Gustafsson, Johnson, & Roos, 2005). The difference and uniqueness of this research was that it concentrated on a segment that had never been realized before, the telecommunication industry in Kenya. This geographical region does not have much research on it and none on churn. Moreover, none of the literature available provided a clear indication of the behavioral patterns leading to churn. Thus this research also complimented and linked the heavily researched topic of customer retention in different

industries with the unpopular term *churn* which is mostly used in the telecommunication industry.

Important Issues, Perspectives, and Controversies

A point to note is that researchers were aware that no sufficient qualitative research has been done and that there was no theoretical framework that exists on the topic. Some in fact, acknowledged that their research on one specific factor causing churn was insufficient to claim they have found a solution (Ferguson, & Brohaugh, 2008). Others yet claimed that behavioral patterns such as customer's perception of quality was composed of a complex combination of network reliability, availability, security, and customer support, which made it hard to predict how to satisfy a customer (Amitava, 2001). In general however, all articles and researchers concurred that retaining customers was an important concern and that it directly affected financial performance.

Definitions

Carriers, refer to the companies that are licensed to provide telecommunication services. There are different types of carriers,

(1) A *voice carrier* is the company that runs calling plans. The voice infrastructure can be via landline, wireless, 2G, 3G, 4G (LTE) or voice over Internet protocol (VOIP) (International Telecommunication Union, 2002).

(2) The *data carriers* are data transfer and Internet service providers (ISPs) that may also own their own cable, optical fiber, or WIMAX infrastructure for connecting their clients (International Telecommunication Union, 2002).

(3) The *telecommunication carrier* is the company that runs the GSM telecommunication network, but does not necessarily own the infrastructure and

assets. In Europe and Africa carriers are usually referred to as *operators*, whereas in the United States they are commonly known as *carriers*. In this dissertation paper the words *carrier, operator, wireless carrier, network operator, GSM companies, and telecommunication operator* were used interchangeably as synonyms. Most telecommunication carriers provide GSM, voice, and data services in addition to other products and services, such as banking services and money transfer (Shaw, 2012).

There are four GSM carriers in Kenya, namely,

a) *Safaricom,* the dominant player,
b) *Airtel*, originally called Kencell, the first telecom company in Kenya that was sold to Zain, then to Celtell and was finally acquired by Airtel,
c) *Orange,* which bought the government owned telecom Kenya, the owner of the land line infrastructure, and
d) *YUMobile*, pronounced *you*, a new market entrant trying to gain popularity by slashing the prices. YuMobile was sold in August 2014 to Safaricom and Airtel

Churn, refers to the action of customers ceasing to do business with a company in a given period. Churn could be through customers switching from one service provider to another, using multiple carriers at the same time, or if they stop using the service altogether (Jiang, Au, & Tsui, 2007). Churn is measured by the ratio of departing customer/total customers (Amitava, 2001).

Coding, the coding in this research refers to the concealing of participants' identity, this was done by allocating a specific code to each participant at the beginning

of the interview. The coding process illuminated the effect of bias and ensured confidentiality of the participants.

Customers, is a term used to indicate any client, subscriber, or mobile user who uses GSM services either through a contract, pre-paid, or post-paid plan (Sutherland, 2009).

Global System for Mobile Communication (GSM) is a technology used by telecommunication carriers to connect customers together via cellular or mobile phones.

On-net/Off-net, is an expression used in the telecommunication industry that defines making calls on the same carrier network vs. making a call to another different carrier. It is very common for on-net calls to be much cheaper as the cost of switching the call is absent (CA, 2013a).

Regulators or regulatory body is the government agency that regulates the distribution of frequencies for different telecommunication and broadcasting applications. In Kenya this regulator used to be called the Communication Commission of Kenya (CCK) until 2014 the name of the organization was changed to Communication Authority (CA). CA provides a quarterly detailed review report that includes crucial statistical data (CA, 2013a).

Subscriber Identity Module (SIM) cards are the small cards placed in phones to connect it to a network, whereas some phones in the US and Europe are locked with built in SIM cards, in Africa most (if not all) phones are unlocked leaving the customer with freedom to choose their preferred carrier. Recently phones with as many as three or four SIM card slots are being sold allowing the customer to alternate between the carriers with ease.

Triangulation, is the use of multiple methods, data collection instruments, interview methods, or a combination of any to enhance the reliability and validity of the research by verifying that the data collection and analysis are accurate (Tobin, & Begley2004).

Assumptions

Assumptions are personal opinions on which the research questions were based. Some of the assumptions in this dissertation were a result of literature research; others were formed based on observations and experience. Assumptions may be biased by many factors; however acknowledging these biases and assumptions clarifies the limitations of the research and its generalizability (Flyvbjerg , 2006). The most important assumption in this research was that customer's behavioral patterns differ and thus it was important to study the different behaviors of customers to understand why they churn. For example, in villages, customers tended to share phones to reduce the cost (Tenhunen, 2008; Sey, 2009), whereas this may seem to the carriers that this person sharing phones is not a churner because of high usage, there is naturally a high rate of churn involved.

The second assumption made was that at least 25% of the customers own multiple SIM cards. In fact, Jurisic and Azevedo (2010) reported that as high as 32.4% of customers owned multiple SIM cards.

The final assumption made was that statistical data alone did not provide enough evidence on causes of churn. This was supported by most researches and articles even those using quantitative statistical data to support their results. The developers of churn prediction software that had proven to be reliable and efficient also acknowledged that their software could only predict the probability of a churning customer based on usage

patterns and that the causes of churn were unpredictable or unknown (Antipov, & Pokryshevskaya, 2010).

Scope

The scope of this dissertation was to investigate the causes of churn in the telecommunication industry specifically in Nairobi, the capital city of Kenya. Despite that some of the causes seemed obvious; most of the research done on the topic only investigated a few factors which were thought to have the greatest influence on churn. The problem was thought to lie in the behavioral characteristics of users who probably change due to cultural difference, age, or due to the technological advancement (Cătoiu, & Gârdan, 2010). Globalization has also changed the perception of users; customers are demanding higher quality that their providers might not be financially capable of providing (Joo et al., 2002). The problem of churn is rather a complex problem that depends on many correlated factors. Some of the factors are economical others are psychological and thus are interlinked and cannot be separated or studied individually. The first objective of this dissertation was to investigate the behavioral characteristics that cause churn. The second objective was to investigate the economic characteristics affecting churn including marketing and promotions. The third objective was to investigate and find the effect of carrier policies as a cause that affects the problem of churn.

Limitations

Limitations of any study exist due to the fact that change is inevitable. Because change exists it is impossible to hold all variables as a constant and thus limitations always exist. Knowing and acknowledging the limitations provides a clear indication of

uncontrollable factors for those who would like to replicate this research in similar settings. The first limitation of this research was that studies on churn are country specific; they are hardly generalizable beyond the geographical region of their study. This is mainly due to the cultural differences between users, the regulatory body, political rules and regulations, and the carriers' policies. Nevertheless, this dissertation provided indicative causes that can be tested in other non-telecom industries in Kenya, or in the telecommunication industries in neighboring East African countries with similar cultural habits.

The second limitation was the geographical scope because all the interviews were done in the capital city of Nairobi which has a total of 3.1 million people out of the 38.6 million people in the whole of Kenya. This sample actually represents 8% of the overall population of Kenya. In addition, although the population in capital city is diverse and does contain samples from almost every tribe and diverse demographical differences, it might not be possible to have a fully inclusive representation of the population in a nonrandom sample. It is believed that in this qualitative case study the geographical differences did not pose a great limitation; however, it is important to note that the results and analysis are only representative of the population of Nairobi and may require further interviews with participants from other cities and villages to full represent Kenya as a country.

The final limitation of this research was the method itself because it is a qualitative research. The outcome of the research was a model identifying possible factors that affected churn in the telecommunication industry in Kenya. Further quantitative research will need to follow the developed model to discover the extent of

the effect of different factors identified with respect to churn. As the sample size was rather small, the data gathered cannot be considered sufficient for doing a mixed method. Further data collection will be required to also include samples from different regions in Kenya as the sample was all collected from the capital city Nairobi.

Delimitations

Whereas limitations are uncontrollable condition, delimitations are variables or conditions that are purposely controlled during research to be able to achieve a specific purpose. A delimitation in this dissertation was that all minors within the eligible population were excluded from this dissertation to avoid the complications of guardian approvals as the time allocated for the data collection would not have permitted for seeking such approvals. Limitations, such as geographical and cultural constraints, are common and accepted in research. Other researchers may wish to investigate other countries and cultures to justify the results of this research. Furthermore, quantitative research on the same topic will prove very useful in identifying the correlation between the factors that were identified. It would also help in identifying the percentages of correlation of each factor and provide a prediction pattern of churning customers based on behavioral factors rather than statistical mobile usage.

Generalizability

In qualitative research, generalizability does not pose a great concern, as the main aim of qualitative methods is to provide a thorough investigation of the problem with a theoretical framework as the end result. Nevertheless, case studies are considered reliable and valid research methods (Wainwright, 1997) that add value to the knowledge (Golafshani, 2003) and are more appropriate for investigating immeasurable and

unquantifiable variables (Morse, 2006). However, like other country specific research on the similar topics (Garcia-Murillo, 2007; Kollmann, 2000; Aydin, & Özer, 2005) this research was also limited to Kenyan population and particularly people living in the capital city of Nairobi and cannot be generalizable beyond that population.

Summary

This introductory chapter introduced the problem of churn in the telecommunication industry in Kenya, highlighting why the problem exists, and most importantly how this research could contribute to the generalizable knowledge (CITI, 2013). The scope of the research and three main objectives were also identified. This chapter also revealed how this research is of great importance to leaders in the telecommunication industry and how the results of this research should assist the leaders to envision accurate organizational policies that would benefit their organizations financially and increase their brand loyalty. The result of this research would also be crucial in managing change in the telecommunication industry in Kenya.

The problem of churn remains a topic with little research on why it exists. Although many researchers attribute the problem to price and service quality, the problem seems to be far beyond just the price and quality debate. This dissertation was designed to collect open-ended data through face-to-face interviews from 20 - 50 adult customers who use dual and multiple networks or have previously churned, to investigate their reasons for churning. The qualitative questions helped the interviewer expand on the different perspectives to understand the phenomenon better. From another perspective, data from carriers was gathered via one-on-one, open-ended interviews with one manager from each carrier and also related to the statistical data gathered from publications and

online data publicly available by the carriers and the regulator. These three data collection methods served as a means of triangulation for higher rigor. Triangulation was used to justify the validity and reliability of the method and data collection instrument used.

Although this research may prove to be very helpful to leaders in the telecommunication industry in Kenya, it will be difficult to state that the study is generalizable beyond this specific case. Further quantitative research will be required to make the research more generalizable. Further quantitative research may also assist in justifying the reliability of this research. The next chapter is an extensive literature review on the problem of churn and its effects on telecommunication carriers in different countries.

Chapter 2

Literature Research

The literature review is usually the first necessary step to begin any research project (Glaser, 2009). Aldiabat and Le Navenec (2011) stated that qualitative ethnographic and case studies should always consult with the literature concerning the research problem before conducting the study. This chapter is an extensive review of the literature with more than 45 peer-reviewed articles and research papers on the telecommunication industry in general with a narrower focus on Africa and specifically on Kenya investigating more than 25 peer-reviewed journal articles from reliable scholarly journals and online libraries. The problem of churn despite its niche topic has also produced more than 40 different articles related to both the telecom and non-telecom fields. The total number of literature sources reviewed in this dissertation is over 150 peer-reviewed scholarly articles from reliable journals and reputable authors, editors, and publishers.

This literature review chapter is an overview of different articles, research reports, and reviews on the telecommunication industry and the problem of churn. The topic of churn was discussed from both telecom and non-telecom perspectives because churn appeared to be a problem widely available in several industries, especially the service industries (Kaya & Williams, 2005). Limitations of existing research was also highlighted to clarify the gap in literature and try to relate the topic of this dissertation to existing available research.

This chapter is segmented by topic rather than chronically; nevertheless, a dedicated subtitle for the history of telecommunication followed the chronological

advancement of the telecommunication industry. The segmentation of this chapter into topics and subtopics will assist the reader to relate the problem of churn with different factors reported in the literature. The factors identified from the literature research were later used as indicators that assisted in compiling the questions used in the pilot interviews.

Telecommunications

The topic of telecommunications is very wide and diverse. Telecommunications started with the telegraph, moved to landline phones, the introduction of the wireless services then followed. The wireless industry is similarly very huge, overlapping within a wide range of the frequency spectrum. Wireless telecommunications start from the low radio frequency walky-talkies, followed by Radio and TV broadcasting, then the different mobile technologies, ending with the satellite phones at the end of the spectrum. The main topic of concentration in this dissertation is on the wireless GSM carriers that operate some or all of the following services,

- *Telephony services*, including voice and data, such as landlines, Asynchronous Digital Subscriber Line (A-DSL), and Integrated Services Digital Network (ISDN).
- *Wireless services*, including second generation (2G), third generation (3G), fourth generation/Long Term Evolution (4G/LTE), Code Division Multiple Access (CDMA), Worldwide Interoperability for Microwave Access (WIMAX), High Speed Packet Access (HSPA+), Voice over Internet Protocol (VOIP), Wi-Fi hot spots, and optical fiber high speed connectivity, including all the additional upgrades and versions of these technologies.

In the following section a brief description on the history of the telecommunication industry and the different technological advancement is discussed.

History of Telecommunications

Telecommunications started in the 1800s with the telegraph as the first electric method of transferring messages through wires. The electric telephone was introduced commercially by the beginning of the 1870s. It progressed rapidly into the market as an easy way for people to communicate effectively (John, 2008; Davidson, 1998). Nikola Tesla was the first to transmit human voice over a wireless medium and won the noble prize in physics in 1909 (Vujovic, 1998). Satellite communication was introduced by NASA in the 1960s followed by a few inventions like car phones and walky-talkies. The first generation of GSM transmission was introduced in the late 1980s. Wireless technology advanced quickly to 2G in 1990s, then into 3G, and finally the fourth generation of wireless communication that is commonly known as LTE had been recently developed.

Telecommunication has been always a way for advancing the economic development by facilitating trade (McMaster, 2003). The importance of telecommunications has thus attracted the attention of many industries in an attempt to control the knowledge flow. Politics and state regulations have had a great impact on the advancement or hindering of the telecommunication industry (Wu, 2009).

Technology Advancement

According to the analytical report by Mayhew, Page, Walker, and Fisher (2002), the cost of building the infrastructure is the highest reason for lagging technology. It was estimated that another five to 10 years are required for the United Kingdom to complete

its optical fiber infrastructure. In developing countries, landline infrastructure is completely undeveloped with a reach of only three people in 100 (ITU, 2012). Furthermore, the poor economic conditions in developing countries restrict governments from subsidizing telecom infrastructure. It is because of such economic conditions that developing countries require tens of years for new technologies to be implemented.

Dual and Multiple SIM Card Holders

Some wireless carriers use Subscriber Identity Module (SIM) cards, whereas others use built-in phones locked to their specific network. The SIM card acts as a unique identifier for the customer as it contains a unique serial number (ICCID) and an international mobile subscriber identity (IMSI). Regulators recently put a rule requiring customers to register their SIM card using their official personal identification to avoid electronic fraud (CA, 2013a).

Despite that a SIM card can only be allocated to a single individual, any person can have multiple SIM cards and can use several carrier subscriptions simultaneously. There are many reasons reported for holding dual SIM cards some of which are to distinguish between business and personal lines, overcoming poor network, avoiding network congestion, saving money by making on-net calls, benefiting from bundled tariffs, and separating voice and data lines (Sutherland, 2009). A web-based quantitative survey on a convenience sample of 606 generation Y users on Portuguese GSM customers reported that 29.4% of the customers use two different carriers, whereas three percent use three lines from different service providers. The same research reported that younger generations hold as many as three different SIM cards to make use of the promotions and cheaper price on on-net calls (Jurisic & Azevedo, 2010).

Other SIM Services

Some machines use SIM cards to communicate over the Internet. These machines are widely spread and are becoming a necessity in daily life like vending machines, Automatic Teller Machines (ATMs), remote monitoring CCTVs, remote control devices, and many others. Although the SIM cards used in machines do not represent an individual, based on the statistical analysis on secondary data published by European carriers, Surtherland (2009) reported that these SIM cards do count toward the population of mobile customers reported by the carrier. Although a carrier may report that its customer population is *x*, the exact number of human beings using the network is *x-m* where *m* is the number of machines using SIM cards. The data reported by the carriers in Kenya do not include or show the number of SIM cards allocated to machines. This results in wrong customer statistics and makes it hard to depend on the carrier's databases as the data could be misleading.

Telecommunications in Africa

Telecommunication businesses in developing countries are very price sensitive due to the low income per capita and gross domestic product (GDP) (Country Watch, 2013). Although the developed countries have already exceeded network penetration rate of over 100%, Africa is still lagging behind with less than half of that rate (CA, 2011). A qualitative research involving 3,640 small and medium enterprises (SMEs) on the different telecommunication and ICT services in 13 African countries reported that mobile communication is the most widely spread and most utilized telecommunication service (Esselaar, Stork, Ndiwalana & Deen-Swarray, 2007). The absence of other telecommunication infrastructure and poor ICT services could be a cause for multiple

SIM cards becoming a common phenomenon surpassing the rates reported in developed countries.

Local and Foreign Mobile Investors

According to Curwen's statistical analysis, mobile carriers in Africa have their unique ways of extracting money from their price conscious customers, which is why it is uncommon to find an international or foreign company that has penetrated the African market successfully (Curwen, 2005). Local African carriers can offer unlimited on-net call plans for as little as $20 per month. This rate is significantly low for foreign carriers to compete with resulting in losses due to high overheads. These low rates are reported to be caused mainly by the high competition in the market and the low economic status of the customers. Thus carriers are directed to lower their calling tariffs, which often hurt them financially and are insufficient to provide high quality service (Curwen, 2005).

Globalization, on the other hand, has altered the customer demand and has put higher demand on quality. When African customers travel around the world and see the quality provided in developed countries, they tend to be dissatisfied with their own local network provider. Even with the rising demand for higher quality services, foreign telecommunication investors tend to shy off due to the high risk and political unrest in the African continent (Curwen, 2005).

Economy and Politics

According to Aker and Mbiti's financial analysis, economy does affect all sectors and aspects of life, and the telecommunication industry is not different (Aker & Mbiti, 2010). Politics and regulations are reported to be an important aspect that affects the telecommunication industry in Africa (Izama, 2011). The low economic status and the

unstable politics in Africa have resulted in lower foreign investment in the telecommunication and ICT industry, which in turn have affected the quality and speed of development of the telecommunication and ICT services (Curwen, 2005).

The analysis by Aker and Mbiti (2010) on sub-Saharan Africa revealed that mobile phones can boost economic development by facilitating exchange of information, especially in trade, agriculture, and medical advising. Knowledge facilitated via mobile phones also reduces the risk of doing business, adds employment opportunities, increases labor efficiency, and fosters innovation development for new businesses (Anonymous, 2009). In other words advancement of the telecommunication infrastructure and expanding the coverage of the network tends to reduce poverty and provides a potent force for economic development.

On the political side, it has been reported that high taxation in Africa was one of the biggest concerns (Anonymous, 2007a). Government, state, and regulators could enhance or hinder the development of the industry. Although some governments try to subsidize telecommunications, it has been reported that taxes on telecommunication services in East Africa are among the highest in the world (Shaw, 2012).

An ethnographic analysis in rural India by Tenhunen (2008) reported that another problem was the high cost of electricity and the fluctuating supply. This directly affected the development and distribution of ICT industry because the cost of fuel is very high and thus the telecommunication services are mostly off during power cuts. As an innovative attempt to solve the issue of electricity, solar powered kiosks that charge mobile phones for a fee in rural areas and villages have become very common.

Mobile Penetration

It was reported that by 1990 the mobile coverage in Africa was only 10% of the population (GSMA, 2012). Although that seems to be a low figure, it is statistically three times the percentage of land line coverage in 2012 (ITU, 2012). This is mainly due to the cost implications of deploying the landline infrastructure. That is why the landline carriers never got enough time or funds to complete its network in a suitable manner. A secondary research analysis of data provided by GSMA and other financial institutions on African countries showed that in 2008 some North African countries such as Algeria and Egypt reported a near 93% mobile penetration, yet the lowest percentages were reported in Central and West Africa (Aker & Mbiti, 2010). Communication Authority (2011) on the other hand, reported that the mobile broadband services were still at 5.4 subscriptions per 100 inhabitants in Africa and developing countries, whereas that figure is 10 times lower than the 51.1% reported in the developed world.

As is clear from the above figures mobile penetration figures are rarely accurate, it has been seen that mobile carriers provide statistical data to the regulatory body without any further supervision or analysis (CA, 2013a). Thus mobile penetration is not justified and can be a misleading variable. In addition as discussed earlier, some of the customers counted toward the percentages are either multiple SIM card holders or machines using wireless carriers as their communication medium.

Network Expansions

Economy directly affects the telecommunication industry in Africa; similarly the opposite is also true. Curwen and Whalley (2011) reported that wireless carriers can enhance the local economy by expanding their network coverage and providing more

services to the rural areas. Esselaar et al. (2007) also reported that additional usage of ICT in Small and Medium Enterprises (SMEs) increases labor productivity. So far the telecommunication industry has generated 3.5% of the total GDP of the continent (Esselaar et al., 2007). Expanding the network coverage increases the demand, especially on trading and financial services, which are facilitated by the mobile carriers. Expanding network coverage also increases other industries' service coverage, especially financial institutions, government facilities, and NGOs that aim at enhancing the living standards and providing affordable services using the GSM networks.

As quality of the service is considered a vital aspect for customers, a continual network expansion and upgrade is required. However, with low cost and low profit strategies implemented in Africa, carriers are unable to justify additional required investment. Airtel, a carrier present in all the East African countries has chosen to deploy disruptive competition by allowing free roaming between the East African countries where it exists. In one sense this has increased their customer numbers greatly and enhanced the implementation of the East Africa Community (EAC) free trade policy. However, a case study on the theory of disruptive competition used in-depth interviews and analysis of carrier database reported that this virtual network expansion provided great benefits to the customers, yet it had affected the carrier's financial situation negatively (Gillwald, & Mureithi, 2011).

Telecommunications in Kenya

The previous section discussed Africa in general; nevertheless, not all developing countries share the same aspects. The following section will concentrate on Kenya, a fast developing country considered by its neighbors as the leader in its region. Kenya has the

strongest economy, currency, and mobile carriers in the region of East Africa (Country Watch, 2013)

Telecommunication History in Kenya

Telecommunications in Kenya started in 1888 when the telegraph was introduced and in 1994 Kenya Post and Telecommunications Corporations (KP&TC) became a well established communication company. During that time telecommunication development had assisted the growth of the economy by facilitating agricultural exports, manufacturing, and tourism (Tyler, Hughes &Renfrew, 2011). In 1999 KP&TC was split into CCK and Telkom Kenya (TKL). On February 2000 Kencell started operating the first mobile service (CA, 2014 c) followed immediately by Safaricom on October of the same year (Safaricom, 2012). In 2003 Kencell was bought by Celltel, which then was bought by Zain in 2004 and finally by Airtel in March 2010. In 2007 Orange telecom the French carrier bought TKL the land line service provider. In December 2008, Essar telecom, branded as *YU*, was the last mobile entrant into an already fierce and saturated market. YUMobile was sold in August 2014 to Airtel and Safaricom after hitting three million subscribers but the brand remained unchanged (Essar group, 2015).

Mobile Carriers and Service Providers

Airtel Kenya the second largest carrier in Kenya in terms of number of customers. Airtel acquired Zain in 2010, after multiple earlier acquisitions from Celtel and Kencell. It came with a promise of high-quality and multiple customer benefits. Airtel introduced the free East Africa roaming over their network and launched a low-cost package providing a mobile phone free of charge to new customers (Shaw, 2012).

Safaricom was the second carrier to enter the market, yet became the leading 3G and mobile money service provider in Kenya. Safaricom has the largest customer base and the widest network coverage (Safaricom, 2012). Safaricom is considered the leader in the GSM industry in East Africa as it continually deploys new innovative products to enhance its network coverage and quality while reducing its operational costs.

Orange telecom which bought the local landline company TKL, introduced the Internet sector, which enabled competition in the critical markets of VoIP telephony, wireless broadband, and ADSL. Orange introduced ADSL2, WIMAX and for the first time in Kenya, the triple-play services (Shaw, 2012). Benefiting from the pre-existing landlines and few mobile masts, Orange telecom deployment was one of the fastest in Kenya as it relied on existing infrastructure.

YUMobile pronounced *you,* is the last GSM entrant in Kenya. It is the cheapest in services and the company with the most affordable offers. It is the market leader in the free on-net calling plans (YU, 2013), but has not picked up with the pace of incumbent and old market entrants as it stands at three million customers only compared to 18 million for Safaricom. The infrastructure of YUMobile was sold to Safaricom and the customers to Airtel in a deal that was sealed in silence leaving YU customers on airtel network without much information.

Culture

The East African culture is unique. Kenyan culture was based on hunting and gathering, although these activities are still practiced until today, enormous development has occurred over the previous decades. Agricultural activities were introduced by the Bantus, a tribe that migrated from the western borders. The northern dry lands of Kenya

were severely affected by the migrating Somalis and Ethiopians fleeing from the lasting wars in the Horn of Africa. The Eastern coasts have also been influenced greatly by the dominant Arab trading. This has even affected the dominant local Swahili language, which is a mixture of ethnic African languages and Arabic. This wide cultural diversity of approximately 30 ethnic groups, 42 tribes, and more than 60 local spoken languages makes Kenya a country with rich diverse culture, but difficult to satisfy with a universal product or service (Country watch, 2013).

Call sharing is one of the common cultures in developing countries (Tenhunen, 2008). However, even if call sharing is an aspect that might be existent in Kenya, there are many more aspects unique to the Kenyan culture. Although the cultural influence on the telecommunication industry in Kenya has not been studied in any literature, it is believed that this unique diverse culture has a significant effect on churn.

Rural/Urban

Rural areas have their own habits, such as mobile sharing, which is a common phenomenon. It has been reported that mobile phones have expanded faster than electricity in rural areas (Tenhunen, 2008). Because private phones increase privacy, awareness, and economic status in rural villages, villagers are becoming aware of the necessity of owning a mobile phone. In addition, the new services introduced by the carriers have enhanced entrepreneurship by providing easy access to business information that reduces the risk of doing business. Despite that some literature reported that the usage in urban and rural areas does not differ, reports from the regulator and carriers in Kenya show differently (CA, 2013a). Wong (2011b) used Cox regression for longitudinal data analysis on 4896 customer records extracted from the database of a Canadian carrier

also reported that churn rate sometimes differs within one country, for example he found that churn rate in Eastern Canada was higher than that of Western Canada; nevertheless, he could not identify the cause for such demographic difference.

In Kenya, like in many developing countries, the rural conditions are devastating, most cities lack adequate sewage treatment facilities, some even do not have clean drinking water. Lack of adequate facilities, in addition to lower wages, insufficient employment opportunities, and other factors caused a rapid migration of the poor rural people into major cities. This migration is causing a gap increase between infrastructure capacity in cities and the level needed to provide satisfactory basic services (Country Watch, 2013).

Mobile Sharing

No reports on mobile sharing in Kenya have been found in the literature research; however, in India (Tenhunen, 2008) and Ghana (Sey, 2009), which are developing countries with very similar characteristics; mobile sharing has been reported to be a common habit. Sey (2009) used a qualitative methodology comprising field observations and in-depth interviews with 22 mobile phone users and 15 mobile payphone carriers. This was supplemented with surveys of 118 customers and 79 non-customers. The research reported that low access to telecommunications infrastructure and the high cost of airtime remain as a challenge for the mobile telephony industry in developing countries. Although rural sharing of phones are reported to be very common, urban sharing of up to 60% was also reported, especially between families and friends. A very remarkable finding in Sey's research was that customers on one network used payphones occasionally to call subscribes of different network; the main reason was to benefit from

the lower on-net calling rate. Finally, Sey's research findings highlighted that phone sharing indicates that mobile services have not covered their full potential yet.

Segmentation

Customer segmentation requires the knowledge of a specific domain and the systematic methods used for customer profiling to enable the exploration of customer transaction patterns and build clustering models that would enable churn activity detection (Qian et al., 2006). Statistical analysis by Le Cadre, Bouhtou, and Tuffin (2010) used a random linear utility model to analyze the competition between an integrated carrier and new entrants; they segmented telecommunication customers into four segments. The first segment is composed of the sociable teenagers, who are often trendy and use communications heavily; they have emphasis on leisure and are eager to experiment with new technologies. The second segment is made of technology addicts. The third segment consists of the high social grade, middle aged, work/life jugglers, who are very busy and use all available means of communications. The fourth segment consists of the low-income, old age, and non-technological customers. Results reflected that teens give priority to the brand image and churn a lot; they feel more attracted to new carriers offering better bundled offers and cheaper services. Segment three does not really mind paying a higher price to get the wired-telephony/Internet/TV bundle, whereas the fourth segment does not see the need to purchase bundled offers as they are not useful to this category.

One of the most useful researches found in literature is a quantitative research that studied the causes of churn in Nigeria, the researchers collected data via structured questionnaires and used descriptive statistics on 800 randomly chosen telecommunication

customers. The study on Nigeria, reported that marital status and gender had insignificant effect on churn. Age had a very slight influence on churn, followed by employment description, income, occupational status, and place of residence. The most important demographic factor appeared to be the educational level (Oghojafor, et al., 2012). Despite that the segmentation done in previous research may seem appropriate for their specific regions; they do not necessarily fit the profile of Kenya. In the following section Kenya is segmented based on age, income status, gender, social status, and education.

Age and generations. Cătoiu and Gârdan (2010) used a focus group qualitative research to interview three groups of 12 carefully selected customers between the age of 20 and 45 years. Their results reported that older customers were more unsatisfied with the networks they are using. After conducting a longitudinal data analysis on 4896 customer (Wong , 2011a) and research on 11525 residential customers from a Canadian wireless carrier (Wong, 2011b), Wong also considered age as one of the four determinants of churn. His research revealed that churn reduces as customers grow older. This implies the need to put more efforts to retain the younger customers.

From the local statistics in Kenya, it is clear from Table 4 that the mortality rate is very high and the average age is very low. The mortality rate after 40 years is almost 60% (KNBS, 2009), which signals an alarm to carriers to concentrate more on the younger generation. However, there is a very slight gender variation in most of the age groups that can be considered insignificant. Table 4 also shows the gender and generation distribution in Kenya.

Income status. Wong (2011a) reported that income level has a direct influence on churn. People who tend to have lower income tend to churn more, probably because they

are looking for cheaper options. Income, together with occupational status, and place of residence were reported to be of high significance to churn (Oghojafor et al., 2012).

Table 4

Kenya Population and Housing Census (KNBS, 2009)

Age group	*Male*	*Female*	*Total*
0-4	3,000,439	2,938,867	5,939,306
5-9	2,832,669	2,765,047	5,597,716
10-14	2,565,313	2,469,542	5,034,855
15-19	2,123,653	2,045,890	4,169,543
20-24	1,754,105	2,020,998	3,775,103
25-29	1,529,116	1,672,110	3,201,226
30-34	1,257,035	1,262,471	2,519,506
35-39	1,004,361	1,004,271	2,008,632
40-44	743,594	732,575	1,476,169
45-19	635,276	637,469	1,272,745
50-54	478,346	477,860	956,206
54-59	359,466	352,487	711,953
60-80+	897,607	928,444	1,826,051

It is reported that 32% of the Kenyan population live in urban areas, which is considerably a high percentage; nevertheless, 60 to 80% of Kenya's urban population live in informal settlements. These slums do not have any access to water and sanitation, no security, inadequate housing, poor environmental conditions, and high crime rates. Thus despite the impression that Kenya might be a highly urbanized country indicating higher income status, the opposite is unfortunately true. The lowest monthly wage is less than

$100 per month; however, it is reported that the income levels are rising by three percent annually (KNBS & MLE, 2011).

Statistics also show that 45% of the population in the major cities lie within the highest wealth index. Interestingly, the wealth index of the richest group is held by women, yet in the poorest segment the wealth index is higher in men. This indicates that poorer women tend to have fewer saving than men of the same income status, which could be caused by higher expenditure, whereas richer women tend to keep their wealth and spend less than men of the same wealth index (KNBS & MLE, 2011).

Gender. Milek, Stork, and Gillwald (2011) studied the social and cultural issues that affect the usage of ICT in 16 African countries. Based on their quantitative analysis of secondary data gathered by Research ICT Africa, and qualitative primary research using focus groups conducted on five African countries, it was reported that the social and cultural aspects are the causes of inequality in gender usage. The results also reflected that the usage was fairly similar between genders in East Africa and that the only influencing factors were education and income. In some countries where the rate of education and income are still higher in males than females the usage of ICT differs between genders. Similarly, Oghojafor et al. (2012) reported the insignificance of gender on churn. Because gender was reported to be insignificant in previous research, and the population seems to be split in approximately equal portions between genders, thus there might be no need for extensive research on gender in relation to churn.

Social status. Some factors such as income level, educational background, and marital status have great effect on churn (Wong, 2011a). Friends who churned also can be direct influencers. Dasgupta et al. (2008) analyzed 60 Gigabytes of call data information

of millions of users also known as Call Detail Records (CDR) provided by data-warehouses from one carrier. They reported that churn not only depends on the relationships of an individual with churners, but also more significantly, on the interconnectivity attributes of the relationships present between them in a social network setting. Therefore, there is no doubt that the social status affects churn directly and is a key player in influencing churners.

Marital status, however reported to be insignificant to churn (Oghojafor et al., 2012). Married people and people living together comprise approximately half the population of Kenya, with slight variance in genders and cities. People who have never married are around an average of 30% of the population, moreover, the population census indicates that 40% of the population are under 15, indicating that a significant percentage of marriages happen under the age of 15 (KNBS & MLE, 2011).

Education. Tenhunen (2008) stated that text messaging is an under used service because most of the villagers using mobiles are illiterate. In remote villages one phone can and usually serve multiple households. As a caller calls and passes a message, the message is transferred from one person to the next until it reaches its destination. The research also reports how phones have increased economic and agricultural information circulation and thus benefited the community. Mobile penetration has not affected illiteracy rate but has added general knowledge to phone users. Finally, the research reported that private phones increase privacy, awareness, and economic status in rural villages. Despite that mobile penetration has not enhanced education, Oghojafor et al. (2012) reported that the educational level has relatively high significance on churn and that it is an item that should be considered when measuring churn.

Wong (2011b), on the other hand, studied the language difference on churn but found that it was insignificant to the problem. However, Kenya has 42 tribes speaking 60 different languages (KNBS, 2009); this could be a significant problem in Kenya. It is worthy to note that more than 60% of the population has completed high school education, with only an average of 2% uneducated/illiterate. Astonishingly, the illiteracy rate is higher in major urban cities than it is in less urban and more rural cities (KNBS & MLE, 2011), yet this is contradictory to the statistics of the same year by KNBS and CCK (2011), which reported that urban cities have higher literacy rate.

Non-Telecom Services

Voice is considered the main revenue generating service for mobile carriers in Kenya (Safaricom, 2012). Data and Internet services however continue to display an upward trend with 34.2% of the population accessing the Internet mainly via the mobile phone. In total, the estimated number of Internet users stands at 13.53 million (CA, 2013a). Although these telecom services are the core business of the GSM carriers, there are other beneficial services that the carriers have offered the Kenyan customers as a way of attracting customers and enhancing their lifestyle, some of these non-telecom services are discussed hereunder.

Mobile banking. There are two types of mobile financial services. The first is the one linked with banks, where mobiles are used to access the bank account, facilitating transfers and access to other services; this is known as *mobile banking*. The second type of mobile financial services is the non-bank mobile money transfer that takes place between customers without the involvement of banks; this is called *mobile money* or mobile payment (Weber & Darbellay, 2010). Mobile banking is not different from

conventional banking, thus security measures have to be administered, especially that carriers are becoming deeply involved in mobile banking and must be aware of the legal issues related to the banking industry.

As the spread of mobile phones in developing countries are wider than bank branches and ATMs, mobile money is gaining high popularity in developing countries. Although regulations on mobile money are not fully implemented, the economic benefit has induced regulators to allow mobile payments without full regulations in place (Weber & Darbellay, 2010). Mobile payments are surpassing the benefits of credit card, especially on lower transaction values (Safaricom, 2011). It is believed that when the telecommunication carriers partner with banks, they could prevent churn for both industries and provide more convenience to their mutual customers.

Safaricom Kenya's largest mobile carrier launched Mobile Money service *M-Pesa* in 2007. In 2012 Safaricom reported that it has 15 million M-Pesa users with revenue more than its text and data services combined, and more than double its revenue from selling devices such as handsets, laptops, and tablets (Safaricom, 2012). Although the primary use of M-PESA is money transfer; it is becoming commonly used to pay for everything such as school fees, utility bills, shopping outlets, taxis, and is eventually used as a form of current, non-interest paying, account (Weber & Darbellay, 2010). Safaricom also added credit and interest facilities to their M-Pesa services and are continuously advancing new innovative solutions (Safaricom, 2012)

Agricultural and health information services. Aker and Mbiti (2010) in their research on Sub-Saharan Africa reflected how mobile network penetration has helped several countries in gaining access to critical information, such as knowing the prices of

selling their crops. Other benefits include the health industry where AIDs/HIV NGOs send text messages to the patients to remind them of their medicine times. Trading information, such as where to get the different kinds of products from and the stock prices have also become commonly used in rural areas. Some of these services are provided by financial institutions, others by government or not-for-profit organizations, and others are provided by the carrier itself to increase its customer value (Anonymous, 2009).

Retail purchase. Customers in Kenya commonly use mobile money for retail purchases; it has surpassed the use of ATMs and credit/debit card (CA, 2011). It is reported, however, that companies that use Internet or mobile retail payments may be making good cash flow but are failing in making profits due to price competition and the awareness of the public (Withiam, 1999). From another perspective, retail purchases and bill payments via mobile have facilitated the life of many, and have influenced many companies to adapt mobile payments as an acceptable method of payment even for organizations as big as Kenya Airways (KQ, 2013).

Mobile Penetration

Different statistical bodies report different mobile penetration statistics. CCK (2013) reported mobile customers to be 29,703,439 with a tele-density of 77.2%. However, Country Watch (2013) reported that the number of mobile customers is only 1,590,800. The great difference between reported customer numbers is reported to be due to misleading reports by the carriers that never accurately represent the mobile penetration ratio (Sutherland, 2009). According to the Research ICT Africa (RIA), at least 25% of Kenya's mobile customers use dual or multiple SIM cards this was also

supported by Sutherland (2009). The misleading reports could also be partially due to counting non-human SIM card users and multiple SIM card holders within the customer population.

Navarro (2005) on his report on two American carriers argued that many carriers prefer not to disclose their network coverage information. A proof is explained through game theory between the two carriers showing that the best Nash equilibrium is achieved when both competitors do not disclose their information. When carriers do not disclose their network coverage information, they can charge higher prices and achieve higher sales volumes. When customers do not know the quality of a specific network in a specific location, they usually take the advice of their friends or family; however, this advice is never accurate because the network quality differs from one location to another as will be explained later in this chapter.

Esselaar et al. (2007) reported that mobiles were the highest ICT service used in Africa, on the other hand, local research reported differently. It was reported that radio had the widest reach with 79.5% followed by mobile telephone at 59.8% of the population connected whereas television came in third place with about 40% penetration (KNBS & CCK, 2011). Again there seems to be no consistent statistical data that is accurate enough or empirically verified.

Usage

Customers tend to choose the best plan they assume to be cheaper for them. Sometimes customer's choices may be biased resulting in choosing the wrong calling plan; however, this provides high short-term profits for the carriers. Lambrecht and Skiera (2006) conducted four empirical analyses based on three different data sets, (1)

transactional data of a representative sample of 10,882 internet customers for a sample period of up to five months, (2) a first survey conducted with a convenience sample of 241 MBA students, and (3) a second survey of 1078 Internet customers. Their results explained that that flat-rate bias is when customers wrongly think that flat rate plan is cheaper for them. Similarly, pay-per-use bias is when customers assume wrongly that the pay-per-use plan is cheaper and better for them. The results reflected that flat-rate bias does not significantly increase churn, resulting in both short-term and long-term profits. On the other hand, the more common pay-per-use bias increases churn, thus the short-term profits are offset by the higher churn rate.

Pre-paid customers often change their purchase behavior without the necessity to inform the carrier about it; yet pre-paid mobile telephony sector has the least academic research available (Jahromi et al., 2010). Although post-paid customers are probably more profitable and less prone to churn, pre-paid customers should not be ignored as they compose the wider customer base. In Kenya prepaid customers dominate the market with a 99% share compared to only one percent of postpaid customers (CA, 2013a).

Mobile traffic has grown by 10.5% between the fourth quarter of 2012 and the first quarter in 2013 to reach seven billion minutes. This rise is reported to be caused by the increasing number of customers coupled with the heavy promotions provided by the carriers. Customer's average monthly usage of voice and SMS has also reported a 7.7% increase (CA, 2013a) showing that customers increasingly depend on communication as an integrated part of their lifestyle.

Recent research by Oghojafor et al. (2012) reported that customers with extensive high usage frequency and volume tend to have higher willingness to churn. This is a very

important finding because such customers are very valuable to the carrier and their loss would mean a significant loss of revenue. Although results of the research by Le Cadre et al. (2010) and Ranaweera (2007) found that higher income customers tend to be less price sensitive and less prone to churn, it appears that the higher income customers are not necessarily those with highest mobile usage.

Promotions

It was reported that customers who change their handset more frequently tend to churn less. The same study also reported that changing the handset once reduced churn by 22.5% whereas customers who changed their handset twice have 39.9% lower chance to churn (Wong, 2011b). This is an indicative to carriers that they should continue subsidizing the handsets and attract customers to change their handsets more frequently. Promotions by different Kenyan carriers are unclear in their websites and sometimes confusing, thus more data needs to be collected firsthand from the carriers during data collection stage.

Bundles and Plans

It has been reported that carriers make enormous profits by confusing their customers leading them to choose the wrong calling plans (Wong, 2009; Wong, 2010; Wong, 2011a; Joo et al., 2002). Although this might provide more short-term profits, it eventually results in overcharging the customers. This often results in customers churning in hope for finding better service at cheaper rates.

Customer Retention and Churn

Corporations that practice relationship marketing have reported that their primary goal is retaining customers because of the several economic values associated with it.

Customer retention is reported to increase profits between 25% and 85%. Customer retention like churn has no predicting factors. Evaluating churn patterns and identifying the reasons for customers' switching habits is also an important aspect of customer retention. The telecommunication companies are considered the industry with highest customer retention efforts (Ginn et al., 2010; Jahromi, et al., 2010). Despite that customer retention has been reported to be multiple times cheaper than the cost of acquiring new customers, Ranaweera (2007) saw that sometimes it might be more profitable to neglect some price sensitive customers who would hurt the carrier's financial situation.

Theoretical Framework

There are two main testing models for measuring the effect of churn that have been used, the first and most commonly used model is the Recency, Frequency, and Monetary (RFM), the second is the customer demographics. Customer perception, product features, and service quality were also used but not as heavily as the previous two models. Later research that concentrated on the effect of quality on churn stated that Service Quality Index (SQI) factors were significant in the predicting of churn (Padmanabhan et al., 2011). None of the research indicated any justification for the factors used in the churn prediction models or churn software but rather go into the statistical calculations immediately while assuming the chosen factors are all applicable and related to churn.

Keaveney (1995) was one of the first researchers to investigate the causes of churn in the service industry. She conducted two identical tests which involved a satisfaction survey on 200 randomly chosen online customers. Keaveney's research reported that the top two factors for churn were core service failures and service

encounter failures. The former is when obvious errors such as billing errors occur. The latter is related to perceived issues in the interactions between the service providers and the customers, such as employees' attitudes. Pricing and inconvenience factors came next, thus showing that price is not the first determinant as managers would always assume.

There are basically two approaches for managing customer churn. The first is untargeted approaches, where the carrier relies on superior products and mass advertising to increase brand awareness, loyalty, and increase customer retention. The second is targeted approaches, in which the carrier tries to identify those customers with high probability of churn, and provide them with an incentive or offer to customize their service plan to suit their needs (Burez & van den Poel, 2007).

There are two approaches for churn identification; the first is the reactive approach. This is when the carriers wait until a customer calls and complains, and then the carriers try to win the customer back if the carrier identifies the customer as a valuable one. The other is the proactive approach, where the carrier tries to identify the customers with highest probability of churn through churn prediction software (Jahromi et al., 2010).

Churn in Non-Telecommunication Industries

Churn does not only happen in telecommunication companies, churn is a problem that faces all industries and popular brands and is discussed by most marketers as an issue of great concern. Although the word "churn" is not commonly used in non-telecom industries, churn prevention is simply an acronym for customer retention. Most services that offer a fixed fee subscription such as health clubs, cable companies, and Internet

service providers are highly prone to churn (Keaveney & Parthasarathy, 2001). Churn is becoming a serious issue for many service companies, such as credit card companies, banking industry, Internet service providers, telecommunication industry, wireless service providers, and cable companies (Qian et al., 2006). Padmanabhan, Hevner, Cuenco, and Shi (2011) investigated the causes of churn in the service industry and found that non-contractual customers are the hardest to retain as their churn patterns are unpredictable due to insufficient information gathered similar to pre-paid customers in the telecommunication industry.

Employee turnover is also sometimes referred to as churn. Chris (2012) suggested the use of dedicated talent management systems to gathering intelligence and implement ongoing staff development to reduce churn in the HR industry. Even employees movement from one location to another whether within one building or between buildings is also termed as churn. This churn action that happens in every industry is reported to cause additional cost of more than $5,000 per year (Leaman, 1991). Thus companies should balance between cost and enhancing employee relationships. Kaya and Williams (2005) stated that the most cost-effective churn management is to only move people and not the facilities. It also revealed that the relative cost per churning person is $70-$1000. Evidence from their study reflected that implementing a technology platform enables a flexible working environment and assists the organization in reducing personnel wasted time, their turnover, and the costs of churn. Although this type of churn is more applicable to manufacturing industries, the recommendations also apply to the telecommunication industry.

Leadership and Churn

Churn is a problem that cannot be blamed on bad economy, high market competition, or solved by simply replacing the sales department (Hall, 2007). The answer can be found in an evaluation of the four key customer value determinants, (a) products and services, (b) sales representatives, (c) management/leadership, and (d) service quality (Hall, 2007). Leaders must ensure that the right resources and organizational development teams are involved in searching for the main causes to develop a lasting solution. Hall (2007) suggested that the leaders should have constant communication with their clients and ask for what they value. Then act on the four determinants above to avoid churn.

Leaders determine the policies based on their long-term visions. They decide when to do marketing and when to reduce price. Leaders decide when to implement a new calling plan and choose which customer gets priority services. Although churn is always considered in their decisions, sometimes the enthusiasm to rollout an idea might result in a wrong strategy. Even with existing churn prediction software, which is reported to predict short-term churn accurately, the problem is much bigger and lies in creating and retaining the good image of the carrier. Leadership has not been influential so far in solving the problem of churn because leaders do not base their decision on empirical research mainly due to its unavailability.

Churn in the Telecommunication Industry

Customers are becoming more intelligent and aware of multiple options available to them. Pricing remains an important factor that customers consider. Churn affects carriers and telecommunication service providers greatly. *TW* telecom reported that they

lost $2.4 million in revenue and a 6.6% decrease in network services due to churn and re-pricing for contract renewals (Barr, 2012). *AT&T* a well-known wireless carrier reported a bitter crunch from its competitor *T-mobile* due to fights over spectrum. By losing its spectrum allocation AT&T could not provide its service or had to provide limited service to its customers. This immediately lead to churn, as customers went to seek the superior network services provided by their competitors. AT&T reported that churn was up slightly, at 1.36% in the third quarter, compared with 1.32% in the fourth quarter of 2010 (Drumheller, 2013). Even *Twitter* considers the effect of churn on their services. It was reported that 60% of Twitter's accounts became idle within one month. Twitter reported that they are seeking ways to improve their relevance and user experience by adding new services and features (Gariffo, 2012).

Price

Price remains one of the most, if not the ultimate factor that affects churn. Chen et al. (2007) segmented customers based on their usage and price sensitivity using their own Customer Segment Model (CSM) and the Segment Functions which they created. The different clusters were tested for churn probabilities, and the following results were reported.

a) *Cluster1*. The customers in this cluster pay higher fees, and consume more long-distance transactions and are reported to have the highest churn. These customers use the network more, and have high expectation. Carriers must adopt retention actions with this cluster.

b) *Cluster2*. This cluster resembles the average spending customers. They have comparatively low churn rate. These customers are satisfied with the

company's service and are loyal long-term customers. The company must deploy appropriate resources to serve them, as they are the customer base.

c) *Cluster3*. These customers' expenditure in this cluster is the lowest, with the lowest probability to churn. Their contribution is lower than average level, so companies do not need to spend any resource on them.

d) *Cluster4*.The customers in this cluster spend more, with more call-in and less call-out. These customers are very valuable; however, their churn rate is high. Therefore, the carrier must ensure that the necessary resources are allocated to retain them.

Competition

Katsianis, et al. (2007) investigated the competition between incumbent and new entrant carriers using technoechomic evaluations, they reported that a price-war usually arises when a new entrant attempts to penetrate the telecommunication market and tries to win market share from an incumbent carrier. Their results, which were based on game theory, reported that with price reduction the customer base is inversely affected showing slight increases. Nevertheless, the Katsianis, et al. (2007) also asserted that price was not the only factor in the market share game, other market conditions such as licenses and new technologies play a big role.

The carrier's policies play a big role in determining their own market share. Radio penetration is also a direct input factor in the model. Harno, et al. (2009) asserted that new carriers must first consider technological advancement and network penetration more than price, as customers would only churn if they found good network quality and service. It was also reported that new entrants that provide poor quality and depend on

price promotions will find it very difficult to win any market share. Thus they should rather target a specific niche segment.

Profitability

Most research papers stated that retaining existing customers is much cheaper than acquiring new ones and thus retaining customers produces financial gains (Ball, et, al., 2006). Datta et al. (2000) suggested that not all churning customers should be contacted. Only the profitable ones should be retained because of the high cost associated with customer retention. The same was also reported by Ranaweera (2007) who saw that in a very tight cost and profit industry, the carriers cannot afford to retain non-profitable customers. The research results reported that sometimes new customers, despite their high cost can be more profitable and do more word of mouth marketing than retained existing customers.

Loyalty

Kuusik and Varblane (2008) stated that the potential for establishing loyalty depends on three things, (1) the *object*, which is the product or vendor, (2) the *subject*, which is the customer, and (3) the *environment*, such as the market and other suppliers. There are many types of loyalty such as, *emotional loyalty* which is more valuable than *behavioral loyalty*. Wireless carriers need to build a direct relationship with their customers to increase loyalty. Although monopoly creates *forced loyalty*, some customers are loyal due to inertia. *Inertia* is when some customers refuse to switch their carrier not because they are loyal but because they are afraid that the alternative is as bad or even worse. *Functional loyalty*, on the other hand, can be created by functional values such as price, quality, distribution, convenience, and loyalty programs. Wining customer via

functional loyalty offers a brief competitive advantage that does not last long because it can easily be replicated by competitors (Kuusik & Varblane, 2008).

Loyalty to a certain brand can at sometimes save the organization great amount of money in customer retention and marketing. Loyal customers tend to give positive word of mouth (Ferguson & Brohaugh, 2008). Brand loyalty differs from one carrier to another. A carrier can be associated positively with family, trust, and security, whereas another carrier can be positively associated with innovation, creativity, dynamics, and mobility (Lai, Griffin, & Babin, 2009). The first carrier would obviously attract family subscriptions and older generation, whereas the second carrier would attracts younger generation and youth.

Research by Jurisic and Azevedo (2010) on 606 Generation Y mobile communication users to view the antecedents of customer–brand relationships reported that preventing churn and the use of multiple carriers can be achieved by increasing customer relationship and brand loyalty. They showed that customers create preference for their brand against competitive brands based on mental schemas. Loyalty impairs the evaluation of service quality, value, and satisfaction. In other words, if the carriers can win brand loyalty, the customers will automatically praise quality and value. It was highlighted that Corporate Brand Management (CBM) and Customer Relationship Management (CRM) are major players in the mobile communication market. Despite that CBM and CRM are the main methods of retaining customers; market share can be increased only through service bundling.

Roos et al. (2005) stated that club effect can sometimes cause customers to become loyal to their carrier. *Club effect* happens when a group of friends or coworkers

all use a certain carrier, and thus new members of the group believe that they must subscribe to the same carrier. Although this kind of loyalty is not voluntary, however it tends to be a very effective way of expanding the customer base by satisfying social groups or clubs with multiple members.

Marketing

Telecommunication companies tend to use real-time marketing techniques that have proven to be very successful (Ginn et al., 2010). Sutherland (2007) reported a churn rate of approximately 25% with a peak during seasons. This sudden rise is usually caused by advertising campaigns that are run by the carriers during the end of summer holidays and back-to-school periods.

Xevelonakis (2008) on the other hand, saw that marketing campaigns can be more influential if a systematic approach to plan and carry out the campaign using Business Intelligence (BI) methods is used. Xevelonakis (2008) suggested four structured steps to ensure a successful telecommunication marketing campaign, (a) the time should be right, (b) offer to meet the needs of the customers, (c) use the right communication channel, and (d) measuring the results for incremental improvements. Xevelonakis further stated that if customers are correctly and regularly approached with the right product at the right time customer satisfaction would always be at high levels, and churn would be reduced dramatically.

Mobile advertisements however have become too invasive and irritating. It was reported that customers have a negative attitude toward mobile advertisement, especially when they have not provided their consent to it (Cătoiu & Gârdan, 2010). Thus before

attempting to pressure the customers with marketing campaigns, it would be worth asking customers first if they would not mind to receive marketing text messages.

Branding

New innovative services benefit the rural community. Moreover, such services promote the carrier's brand and image as a socially responsible carrier (The Economist, 2009). Incumbent carriers usually have the lead and brand advantage that gives them a head-start over new entrants. However, this does not give them the luxury to neglect their customers, on the contrary it should give them an allowance to serve their customers better and implement retention strategies to prevent churn to new market entrants providing cheaper calling plans.

Organizational Policies

Katsianis, et al. (2007) asserted that carrier policies played a large role in determining where their network positions itself within the market. Colin (2002) reported that offensive strategies, such as geographical expansion and providing new services, prevented churn. On the other hand, defensive strategies, such as exploiting the existing market by price reduction, marketing, or introducing new products, increased the probability of churn.

It is more profitable for a new entrant to concentrate on a specific niche segment and win good market share in that segment than attempt to beat an incumbent well established carrier. Incumbent carriers, on the other, hand should continually add value to their customers by expanding network coverage and providing more mobile services to their customers (Katsianis, et al., 2007). These new services will distinguish the

incumbent carriers from the lower priced new entrants as in the case of *Safaricom* in Kenya (CA, 2013a).

In a study on two carriers Le Cadre et al. (2010) suggested the following strategies to be used.

a) When both carriers are small or equal in power, it is best that they use a market share expansion strategy that allows them to increase their customer base and survival;

b) When one carrier is big, it systematically uses a multilevel price discrimination strategy. This adds value to the brand by differentiating between the segments;

c) When one carrier is of middle-size, and the other is a large incumbent carrier that poses a threat, the first middle-sized carrier should use a segment targeting strategy by capturing market niches.

Technological Development

A study by Harno, et.al, (2009) that analyzed three different scenarios reported that the higher the technology used, the greater the penetration, and thus the more customers joining the carrier's network. It was also stated that carriers unwilling to invest in expanding their portfolio of services would lose their customers to competitors. Sutherland (2007) reported that the introduction of 3G technology increased churn at a much higher rate than mobile portability, which concurs with other research that technology advancement is a key player in churn.

Virtual carriers or virtual operators are mobile carriers that use existing network infrastructure owned by other carriers to host their frequencies and serve their customers. In this case the virtual carrier only acts as an agent; however, due to their low overhead

cost; they often provide less priced plans than the carrier hosting their network. It has been reported however that churn is much higher in virtual carriers than those that own their own infrastructure (Anonymous, 2007b). The same was supported by Curwen and Whalley (2007).

Number Portability

Mobile Number Portability (MNP) is a service that allows mobile customers to change their wireless service or carrier while retaining the same phone number. Research on the Korean telecommunication market reported that 40% of customers were willing to churn if they were allowed to keep their current numbers (Park, Kim, & Lee, 2007). The research had used a contingent valuation method to investigate 1,161 subscribers' willingness to pay for mobile number portability. On the other hand Shin and Kim (2007) reported that mobile number portability in the same Korean market proved to be insignificant to churn. Their research used statistical MNP data that were analyzed using ANOVA and logistic regression. The later research was further supported by Sutherland's research (2007).

Shin and Kim (2007) stated that mobile number portability only helped the industry lower its prices and forced the incumbent carriers to reduce their prices to avoid churn of their customers to competitors. Shin and Kim (2007) also reported how carriers diluted the effect of number portability by locking their phones with a built-in SIM card and by signing long-term contracts with their clients to prevent them from churning during their contract period. Some carriers go to the extent of sabotaging the forwarding quality of calls to imply to their churned customers that the other carrier provides lower

quality and thus return their customers; Garcia-Murillo (2007) called this process the *backward churn*.

Value to Customers

Research results reported that the most important factor was increasing value for the service or product, as customers are increasingly looking for better value. Value can be increased either by reducing price or increasing quality (Ginn et al., 2010). Similarly, Withiam (1999) reported that customers value convenience over price. Bundling products over the Internet, allowing different payment methods, and customizing orders are good ways to provide convenience.

Cătoiu and Gârdan (2010) research reported that customer satisfaction depended on several factors, but mainly on cost per minute, the amount of free minutes, and personalized cost per minute. Loyalty was also shown to be low due to customers not finding value in what they pay for. The research reported that customers can feel artificially satisfied if the carrier provides them with bundles that they feel is personalized individually to them.

Customer Perception

Customer satisfaction has three antecedents, (a) perceived quality, (b) perceived value, and (c) customer expectations (Andreson & Fornell, 2000). Churn varies with the customers' perceptions and assumptions of prices and quality, the pre-existing levels of dissatisfaction, and the ease of portability. In addition, the high churn rates observed in carriers are reported to be due to inadequate quality of service, such as insufficient network coverage, drop-out calls, exaggerated prices, weak signal strength, and poor customer service (Sutherland, 2007).

Customer Service

Batt, Doellgast, Kwon, and Agrawal (2005) conducted a survey on a nonrandom sample of 310 carefully chosen call centers in the United States and India. They reported that customer service is an important aspect for customers. Although customers demands for the best value for their money and the best available customer service, the carriers have to balance between cost of quality of customer service and customer churn. It has been reported that customer care centers have a very high turnover rate of 55%, which results in high cost of running the customer care facility. Carriers in the United States have tended to use in-house customer service centers to enable them to control quality. Whereas this adds much cost compared to outsourcing or offshore customer care centers, it had been reported that outsourced customer care centers provide very poor quality due to the lack of quality control, high turnover, and insufficient training (Batt, Doellgast, Kwon, & Agrawal, 2005).

Customer Relationship Management (CRM)

CRM is the strategy that companies use to build and manage long-term relationships with their new and existing customers (Blery & Michalakopoulos, 2006). A qualitative open-ended survey on a sample of 20 large companies that own well known national brands by Ginn et al. (2010) revealed that building a good relationship with current customers and continuously reviving this relationship to add value is the best way to enhance customers loyalty. Withiam (1999) also stressed the value of personal customer relations in reducing churn and retaining profitable customers. Although customer relationship is important, it is mandatory to manage the high cost associated with customer relationships. It is important to concentrate on the profitable customers, the

loyal customers, and the heavy users who usually comprise 20% of the customer base (Joo et al., 2002).

A study by Khaligh, Miremadi, and Aminilari (2012) on Iranian carriers investigated 27 different components divided into three main groups, (a) Customer Loyalty, (b) Customer Retention, and (c) eCRM. Customer retention was split into customer satisfaction, customer involvement, customer trust, attractiveness of alternatives, service quality, price, and switching barriers. The results reported that scalability and flexibility are the important factors to construct customer loyalty. To implement customer retention successfully, priority consideration should be given to personal compatibility, professional competence, frontline employees, quality of services, and pricing policies attractions. The model used in their research could prove very valuable as it investigates several demographical factors in addition to the 27 components.

Promotions

High competition in the telecommunication industry has resulted in lower price level, special offers, a higher product or service quality, and improved customer care. Often, blanket promotions are deployed, which destroy value through discounts and free services (Xevelonakis, 2008). However, despite the large investments made to retain existing customers and try to win new ones, the churn rates remain high and average revenue per user are still decreasing.

Bundles and Plans

Bundles and plans come in different forms; each is usually directed toward a specific audience. Choosing the wrong plan can sometimes result in overcharging the

customers who in turn churns because they feel that they do not get value for their money. Based on a research that investigated the number of days of use of mobile services done by Joo et al. (2002) that was conducted on 10,000 randomly selected customers from a mobile carrier, it was reported that 40 to50% of the customers are subscribed to the wrong calling plan. Similarly, Wong (2011a) reported that 55.4% of the customers are subscribing to non-optimal rate plans. It was also reported that people who changed their call plans more than once churned less (Wong, 2011b).

Customers with the wrong calling plan are more profitable to the carrier on the short-term; however, they have a high probability of churn due to their perception of unfair pricing. Joo et al. (2002) suggested that at least 20% of the carrier's loyal and high income customers should be informed to correct their calling plans. Although this could result in short term losses, it often would result in higher loyalty.

Danaher (2002) investigated telecommunication bundles on four different user segments. The first segment was not charged any access fee but had to pay a small per-minute usage charge. Segment two paid a small usage charge in addition to a three access price increase over the trial period. Segment three did not pay access fee but had a usage charge increase. The fourth segment had both access fee and usage charge increase. Observations revealed that higher access fee resulted in customer attrition (churn), whereas higher usage cost resulted in lower usage. The findings reported that access price has a strong effect on retention. It was also reported that usage price had strong effect on usage, which lowers usage and results in higher churn. The last finding is that churn rate is more sensitive to access price rather than usage price. All these factors should be considered when piecing together a bundle.

Network Quality

One of the most important aspects of customer turnover is managing service failures. Customers who find that the service is unreliable tend to churn (Ginn et al., 2010). Quality is reported to be more important than price and is the main reason for churn, yet measuring quality is harder to predict than anyone would think. Navrro (2005) in his game theory model article explained that the quality of the carriers is completely unpredictable, it depends on where the call is made, whether the caller is staying in one location or moving, frequency and range of travelling, time of the call whether day or night, whether the call is on-net or off-net, and even the number of people making calls simultaneously on the same network. Thus there is no carrier that could provide the best quality at all times and in all locations.

The quality perception depends on the carrier's interaction with the customer and the customer's unique usage pattern. Thus, word of mouth is not indicative of the quality because the negative effect could be resulting from a drop zone in a specific area not well covered by a carrier, whereas another carrier could have the same location well covered (Navrro, 2005). Because the quality varies with many factors, such as the number of customers on the network, the perception of quality also varies. As the number of customers increase, the quality decreases, thus resulting in higher churn, which in turn reduces the customers and increases the quality (Amitava, 2001). This simple illustration of the relationship between two factors is much more complicated with more than 200 different factors that a carrier needs to correlate.

Economic Value

The economist (2009) reported that adding an extra 10 mobile phones for every 100 people in developing countries increases the GDP per capita by 0.8%. The article reported that the telecommunication industry in developing countries have adopted three main trends, (a) home grown carriers developed new business models to enable them gain profit out of the low spending customer, (b) the Chinese equipment makers once known for their low price and low quality products are emerging as high quality innovative technology producers (Vosevich, 2012), and (c) carriers are increasingly trying to develop new phone-based services, to supplement voice and data services. These three trends enhance the economic value while blocking foreign competitors from entering the market.

Number of Carriers

Strong competition in a saturated market with wide penetration directs carriers to focus on price and heavy advertising (Jurisic, & Azevedo, 2010). Unfortunately, none of the researches have investigated more than three carriers, although some countries, such as Uganda and Burundi have up to six carriers, whereas Kenya has four GSM carriers. So it is clear that the effect of the number of carriers have not been sufficiently studied.

Kenya has four GSM carriers and a number of ISPs. Whereas the number of Kenyan carriers is less than that of neighboring countries that have even lower population, it was reported that the last entrant struggled to get a market share (CA, 2013a) and ended up selling the company after six years in the market. This signifies a near closing for the window of opportunity in the Kenyan GSM telecommunication market.

None of the literature research investigated the influence of the number of carriers on churn; however, the effect of market saturation has been studied by Lee, Yu, Yang, and Kim (2011). Their research reported two main results, (a) innovation effect is the main factor of customer churn in a saturated market, and (b) fast mover strategy still has its imitation effect even during market saturation. The researchers thus suggested that first, late movers should develop innovative products to churn customers from fast movers. Second, the first and fast movers should concentrate in developing their services to match their competitor's advantage, especially those related to technological leadership. This should be implemented in conjunction with the continual development of their innovative products. Finally, the research results reflected that imitation effects clearly exist, and they are beneficial to first and fast movers.

Politics

The government and state have a big role and play a great part in expanding the networks by subsidizing carrier's fees (Tenhunen, 2008). This has caused phones to expand faster than electricity. It was reported that villagers who do not have electrical connection would rent electricity from their neighbors or private businesses to charge their phones. On the other hand, politics can have negative effects on the telecommunication industry, especially during times of unrest or election, such as the case of banning unauthorized carriers (CA, 2013b), blocking the live broadcast of election events in Kenya (CA, 2013b), and blocking text messages with words against the government in Uganda (Izama, 2011).

Wu (2009) reported that corruption is limiting and detrimental to a country's economic development. The same also applies in the case of Kenya. Allowing foreign

investment is also a factor that can accelerate the development of the industry. Banning foreign investments could cause the hindering of technology development as in the case of China's telecommunication industry.

Regulatory Body and Telecom Rules

Government, state, and regulatory bodies have enormous power in controlling the telecommunication industry (Anonymous, 2009). Although some state and regulatory bodies subsidize the telecommunication industry (Tenhunen, 2008), other regulatory policies demand some restrictions and bans on certain services and frequencies (CA, 2013b). The Communication Authority has acted in favor of the industry by reducing its Mobile termination rates (MTR) on mobile carriers forcing them to pass on this reduction to the consumers. In addition, they also were strict in terms of frequency misuse and unlicensed carriers who try to fall behind the regulations.

Roaming

Roaming is the service provided by the carrier outside the borders of the local network. Although some carriers might have sister companies or extended network in neighboring countries; nevertheless, in many cases this also falls under roaming. Roaming is significantly costly and that is why it was reported that travelers tend to buy new SIM card in the country they will stay in rather than use roaming (Jurisic, & Azevedo, 2010). Airtel had introduced the one-network service within the 17 countries it operates, where it levied the roaming charges significantly. This allowed a customer to receive free calls in any county where Airtel operates as long as the customer roams on their network (Gillwald, & Mureithi, 2011).

On-net/Off-net Calls

On-net is the term used when people call other customers of the same network, whereas *off-net* is calling a customer on a different network. It has been reported in several research papers and articles that one of the main reasons that customers use multiple SIM cards is to take the advantage of cheaper on-net calls and the offers that come packaged for on-net calls exclusively (Sutherland, 2009). On-net calls can significantly affect churn by attracting club members to take advantage of calling plans that sometimes even give completely free on-net calls (Jurisic & Azevedo, 2010).

Correlation between Factors

Amitava (2001) presented a unique business plan model for telecommunication carriers and showed the direct relationship between churn and other factors such as network performance, increasing customer base, pricing, new customers joining the carrier, revenue and profitability, and perception or perceived quality. The article presented the life cycle of a customer joining any carrier. New customers would usually attempt to join the carrier with the highest reputation and brand awareness. The perception is then developed based on the personal values of each individual. It is also noted that no carrier has a single strategy throughout, and thus the perceptions differs not only on the carrier but also on the time of subscribing to the carrier as well. For example when price fixation is introduced, many customers join the network. The excessive subscription affects the network quality and thus reduces the value provided to the customer who in turn churns to other networks seeking higher quality. By churning, the network becomes less congested, and the quality becomes better and the cycle repeats.

The research results reported that, (a) flat-rate pricing increases customer base but hurts profitability and network performance, (b) usage-base pricing increases customer base, (c) customer's churn affected by network quality plays a significant role in balancing market share with profitability. In other words, Amitava (2001) clearly demostrated that customer's behaviors, network performance, and financial performance cannot be easily characterized in isolation; their interconnection and interaction amongst each other makes it difficult to define the effect of each factor separately.

Flat rate pricing plan attracts more customers; however, it requires high investment in infrastructure that the low profitability associated with this plan cannot accommodate. In addition to pricing as a major factor for churn, carrier's reputation for service quality is another direct factor. Nevertheless, customers' perspective of service quality differs and depends on a combination of network reliability, availability, security, and customer support. High reputation provides the carrier with a higher probability of avoiding churn during low service periods, yet this is based on the carrier's speed of reaction taken to return the quality to the same or higher standards (Amitava, 2001). It is clear that the factors are all interlinked with many psychological factors in between, which makes it very hard for churn prediction software to identify the factors that would predict churn.

Churn Prediction Software

Churn prediction software tools are numerous and have been reported to be relatively accurate in predicting churn; nevertheless, they all fail to identify behavioral patters but rather depend on usage and statistical data. The most common churn prediction methods used are classifiers, such as logistic regression, neural network, and

decision trees, although other methods, such as hazard modeling approach and social network analysis have also been applied to churn prediction (Xu, Lai, & Qiu, 2009). The best reported way to predict churn is by using the following factors:

a) *Behavioral data*, which includes the number of minutes used, the amount of revenue, and the type of handset equipment used,
b) *Company interaction data*, which is identified by the frequency of the customer calling the service center, and
c) *Customer household demographics*, which includes common demographics, such as age group, income level, geographic location, and home ownership (Xu et al., 2009).

Ideally this should happen; nevertheless, the demographics are quite difficult to acquire for all the customers, especially the pre-paid customers.

Datta et al. (2000) introduced churn software that was developed in-house by one of the carriers whose name was not disclosed. They called this software CHAMP (CHurn Analysis, Modeling, and Prediction). Their research reports that more than 200 fields consisting of billing and service data for each customer are stored every month. Feature selection processes begin with more than 200 features and reduce the available set to about 30 to 50 features; nevertheless, the choice of which feature to test changes every time.

The Statistical Process Control (SPC) technique was developed by Jiang, Au, and Tsui (2007). Churn detection pattern in the telecommunication industry was analyzed to prove the efficiency of their technique. Their research indicated that the success of their model depends mainly on the efficiency of the profiling algorithms used to quantify their

customers and segment them according to their business trend and volatility. This procedures means that there are no specific criteria for evaluation and it all depends on the customer profile based on personal understanding. It was noted that wrong or inadequate profiling can result unavoidably in degrading of the SPC performance methods and could even result in hindering the use of the application in practice. Nevertheless, because the causes of churn were not identified, the results of the model are questionable.

Chen et al. (2007) also developed a two-step model that they reported to predict churn more accurately. Their variables contain mostly statistical data like many other churn prediction software. However, the advantage in their model consists of adding specific behavioral factors such as age, marital status, duration of residence in one location, degree of education, employment status, duration of employment, gender, number of people in household, and other description. In general the behavioral factors tended to investigate the stability of the customer. Nevertheless, in their clustering, it appeared that price was the major factor in segmenting their population.

Lima, Mues, and Baesens (2009) investigated previous research on churn and the different methods of churn prediction. Their research used domain knowledge integrated with data mining analysis by analyzing a decision table extracted from a decision tree or rule-based classifier. The research reports that their model can help companies discover customers who are more valuable or who have higher probability to churn, in addition to identifying the main factors that can contribute positively or negatively to the relationship with the customer. Nevertheless, they failed to indicate the variables that had been tested.

Antipov and Pokryshevskaya (2010) used a Chi-squared Automatic Interaction Detector (CHAID) for logistic regression diagnostics on a large sample. Their results reported that when variables are subdivided using binary or non-binary trees into more categories, the probability of predicting churn becomes better. Nevertheless, they indicated as a limitation that it is misleading to think that building one model for all observations while using predictive accuracy measures can work universally. These limitations occurred because when any significant variance in classifier performance across different segments of observations occurred, it changed the efficiency and accuracy of the software predictions.

Jahromi et al. (2010) concentrated on developing a churn prediction model for pre-paid customers stating that most previous churn prediction models and software concentrated only on contract customers who resemble less than 20% of the carrier's customers. The biggest problem they faced was tracking churning customers because there were no indicative measures that show the prepaid churn points. They thus tested the Recency, Frequency, and Monetary (RFM) usage of the customers over a 15-day period to identify pre-paid churners. Their results reflected that both the simple and cost-sensitive predictive models they introduced produce more accurate results than the random sampling churn prediction.

Although all the previous examples used different models to develop their software, Saefuddin, Setiabudi, and Achsani (2011) reported through their research that churn prediction software provide misleading marketing information. The reason is that some software models do not consider the effect of over-dispersion on regression-based decision. Their research also reflected how complicated churn prediction is because of the

many factors that depend on it. In addition, the great number of variables, and the enormous amount of data that should be analyzed increases the possibility of errors in churn prediction software. Certainly churn prediction software has many limitations, and they will continue developing over time, more publications will appear on CRM, data mining, and customer churn due to the emerging importance of these topics as reported by Ngai, Xiu, and Chau (2009).

Tested Behaviors Characteristics

Different researchers tested different causes of churn assuming that they were the most important. However, the assumptions on which relevant factors were considered varied greatly from one researcher to another. A carrier's database can generate up to 250 different factors for each customer, yet most of them are statistical usage data. Similarly, Datta et al. (2000) reported in the limitation section that although they can, to a great extent, accurately predict churn, they do not have any behavioral explanation why churn happens and that it requires further research.

Antipov and Pokryshevskaya (2010) chose to test account length, international plan, voice mail plan, number of voice mail messages, total day minutes, total evening minutes, total night minutes, total international minutes, and number of calls to customer service. Whereas the CHAMP prediction software chooses 30-50 different features out of the 200 features provided from the carrier's database (Datta et al., 2000). Although the features tested change constantly, it was reported that some of common features that appear on regular basis include minutes of use, balance forward from previous monthly bills, and the tenure of the customer. In all cases, the factors considerably change but no one knows the actual reasons.

Generalizability

Antipov and Pokryshevskaya (2010) stated how well their churn detection model worked and signified the benefits of segmenting variables rather than taking them as a whole, yet in the end of their research they explicitly stated that it is practically impossible to replicate one model to become universally usable. This is because any significant variance in the variables could distort the results of the software. Chen et al. (2007) found that most churn prediction and customer management procedures segment customer only by single data mining technology from a specific view, rather than based on systematical framework. Therefore, churn prediction cannot identify customer churn trend for taking different actions. They are thus not generalizable beyond their specific targeted carrier and country within which the study took place.

Prediction Accuracy

Antipov and Pokryshevskaya (2010) reported with empirical data from the *Chi*-squared Automatic Interaction Detector (CHAID) model that churn prediction software was to a great extent accurate in its prediction, but it cannot be replicated as the factors change from one carrier to another and from one country to another. On the other hand, Jiang, Au, and Tsui (2007) noted that inadequate profiling estimates can result in hindering the performance of SPC methods and provide wrong results. Thus, it appears that although all churn prediction software and models do predict churn accurately to a great extend, they did have also some serious limitations. The main limitations lied in the way they chose the factors while also neglecting many behavioral patters that are hard to quantify and test using churn prediction software.

Statistical Process Control (SPC) technique proposed a framework for activity monitoring that followed three phases. In the first phase, the customer's historical data is used to profile the customer. This puts great emphasis on the profiling and estimation method used. The software is required to do the modeling accurately without the need for human intervention. After creating the customer profiles, phase two is initiated with an online algorithm developed to update the customer's profiles. Updating the profiles is done by monitoring any significant departure from the predicted profile. Finally, in phase three when specific events are identified in any customer's profile, the marketing department does diagnosis and re-profiling of the model to identify the significance of the identified events and to take the most appropriate action toward the customer (Jiang, Au, & Tsui, 2007). Following these procedures signifies that there are no specific criteria for evaluation and it all depends on the customer profile based on personal understanding.

Behavioral Characteristics of Churners

Keaveney and Parthasarathy (2001) used results from two field studies done on 28,217 randomly chosen online customers to study different attitudinal, behavioral, and demographic attributes that discriminate between churners and non-churners. Their study investigated the effect of (a) external sources of information such as articles and advertisement, (b) interpersonal sources of information such as word of mouth, (c) experiential sources such as one's own personal experience and general knowledge, (d) usage frequency, (e) usage intensity, (f) risk-taking behavior, (g) income level, (h) education, (i) satisfaction, and (j) involvement.

Their results reflected that continuers are more influenced by external and experiential sources than switchers, whereas continuers were less influenced by word of

mouth than switchers. The research also reported that frequency and usage had direct effect on continuers, whereas intensity of use did not affect the continuer's decisions. Higher income and higher education were seen in continuers as opposed to less income and less education levels in switchers. Continuers also reported lower risk propensity than switchers. Finally continuers had higher satisfaction and involvement scores than switchers (Keaveney & Parthasarathy, 2001). Thus the research reported that all the factors discussed had higher values in continuers, whereas word of mouth only affected the switchers. In other words, if a satisfied customer who has higher income, higher education, higher involvement, more product and service pre-experience, and more post-purchasing experience will be less affected by negative word of mouth and will be less prone to churn.

Gaps in Churn Literature

Much literature has been reported on churn, yet none of them could state that they can produce a universal tool for churn prediction or know all the reasons of churn. Ginn et al. (2010) reported that customer surveys and customer metrics, such as customer satisfaction index, customer expectation index, customer value analysis, brand preference analysis, repurchase and recommend intention measures, share-of-wallet analysis, and trend in spending are only indicative but are not sufficient measurement tools.

Most of the literature only analyzed age and gender, whereas only a few researched marital status and geographical location. There are numerous literatures that tested different calling plans and its effect on churn. However, none of the literature correlated these demographics to the calling plans. Similarly, introducing new telecom

and non-telecom services is reported to reduce customer's churn, yet none of the literature investigated the churn of a specific service separately.

Because the problem of churn is so complicated and interlinked to many factors, the researchers tend to take a small number of factors and test them disregarding the effect of other factors. There are as many as 250 different factors that can affect churn, whereas even the best software chooses between 30-50 factors to test. This dissertation, aimed with its qualitative method, to identify which factors should be of concern to leaders.

Wong (2011a) stated that churn research is incomplete because customer churn may be influenced by a wide range of factors. Some factors such as income level, educational background, and marital status are not included due to unavailability of the data from the wireless carrier. Because customers' demographics often change, this complicates it for carriers as they continuously need to monitor their customer's demographic status, which can imply pervasion of their customer's privacy. Some research investigated age, gender, and geographical location; however, that still remains unexpressive of the cultural and behavioral factors that could affect churn. These characteristics can be investigated only through a qualitative case study.

Conclusion

The telecommunication industry is considered one of the top sectors on the list of industries suffering from churning customer (Jahromi et al., 2010). The telecommunication industry is facing two major problems. The first is the increasing churn rate in the highly profitable post-paid and contract customer segments. The second is unpredictable and uncontrollable churn associated with the pre-paid segment. Many

organizations do not collect personal details for pre-paid customers and therefore find it very difficult to track churners (Doyle, 2008).

From previous literature it appears that almost every tested factor has direct impact on churn because the causes of churn are so interlinked to the extent that they cannot be investigated independently. For this reason any research that attempts to investigate one factor and its effects on churn ends with a conclusion that the factor under study is very significant to churn and must be included in future churn prediction models and software. Nevertheless, with almost 250 different factors to consider and all these researches in place, it is hard to conclude which factor need to be considered when making decisions, moreover changing cultural and cultural differences alter previous research results as reported in the limitation section of most research.

Literature research also has shown conflicting statistical figures and conflicting data even from national census sources that are supposed to be the most reliable. This supported the decision for implementing a non-statistical qualitative case study research that would gather qualitative information firsthand from the customers through field research. The next section will describe how the information was collected and analyzed.

Summary

This chapter was an extensive overview of the literature on the topic of churn in general. More emphasis was added to focus on the telecommunication industry in Kenya and to highlight the uniqueness compared to other countries. Different market trends that may cause differences in the customer usage patterns were also discussed. This chapter only viewed the problem of churn from reliable secondary resources and different viewpoints such as peer reviewed articles and reputable journals and publishers, the next

chapter describes in details the process of collecting primary data through field research and how these data will be analyzed.

Chapter 3

Research Methodology

Chapter two concentrated on secondary literature research to investigate and give an overview of what has been written and published on the telecommunication services and customer churn to date. These reports and researches had been very helpful in preparing the pilot interviews; nevertheless, secondary research is insufficient to add further knowledge to the body of science. Primary research is essential and necessary to add value to the research. The method section is the beginning of the primary research. In this section the research method will be described, explaining why the specific methodology was chosen, and why it is relevant to this particular dissertation.

This qualitative single, explorative case study investigated and explored the causes of churn in the telecommunication industry in Kenya. The question was clearly a qualitative *why* and *how* questions that could not be quantified nor understood through figures. Although there are many types of research, the case study research was found to be more appropriate in investigating a phenomenon through in-depth investigation of the problem, especially when the problem involves sociological aspects and human complexities. A case study must satisfy three rules, which are (a) describing, (b) understanding, and (c) explaining (Center of Writing Excellence, 2009).

Literature had emphasized the importance of leadership in the telecommunication industry. Understanding the nature of the problem and the psychological aspects of the churning clients assist leaders make better informed decisions and help them manage change. Where the involvement of human psychology appeared to be of great influence, the positivist view had no strong footprint and could not make meaning of social and

psychological data. Naturalistic and hermeneutical attributes clearly demonstrated their superiority as a method that was more appropriate for this dissertation (Erickson, 2012), and thus the case study method was chosen to best suit this dissertation.

Research Method

Not a single qualitative case study on churn existed in literature, the ones that were available were either secondary data such as articles discussing the problem from literature review and author's own perspective or were based on quantitative studies with data mainly gathered from carrier's data bases. Very few quantitative researches were done by collecting primary data directly from the customers. The uniqueness of this research is that it is the first to investigate the actual causes of churn rather than assuming any hypothesis with no theoretical background or model. Thus, this dissertation filled an important gap in the literature and research on the problem of churn.

Qualitative approaches are increasingly replacing the previously dominating social and psychological research as an alternative to the study of human beings (Gordon, 2010). Human sciences, including phenomenology, hermeneutics, and symbolic interactionism have been defending their integrity against the natural sciences and have developed progressively since the 19th century. Qualitative paradigms adopt an idiographic methodology viewing reality as a multiple, socially, and psychologically constructed phenomenon. In this construct the knower and the known are inextricably connected to each other. Qualitative approaches make use of naturalistic designs that aim to study behaviors in natural settings. Qualitative methods, however, are not a substitute for quantitative methods, but they complement each other as each is most appropriate for a specific purpose (Reige, 2003).

Whenever the questions *Why* and *How* are asked, quantitative studies often fail to answer. Qualitative methods are known for their descriptive and explanatory nature, they are used when quantitative data has no meaning to the body of knowledge (Ambert, Adler, Adler, Detzner, & Ambert, 2008). Also qualitative research is the best and probably the only way to evaluate behavioral and sociological phenomena (Wainwright, 1997). Thus qualitative approaches are increasingly replacing the previously dominating social and psychological research as an alternative to the study of human beings (Gordon, 2010). Erickson (2012) also supported that qualitative research is not only meant to report behavioral actions but also describes social action, in other words to explain what people say and do (Smeyers, 2001). Finally qualitative research aims to generate a theory when none exists (Christensen et al., 2010). For all the above reasons, qualitative research was chosen as the only possible and most appropriate method to be used in this dissertation.

Research Design

Case studies are either single or multiple, multiple case studies are a replication of single case studies in other settings; however, each study is a complete case on its own. The aim of case studies may be exploratory, explanatory, or descriptive (Woodside, 2010). The main purpose of using case studies is to develop critical thinking. Naturalistic designs, including case-study designs involve an in-depth examination of an instance or event known as a *case* (Gelo, Braakmann, & Benetka, 2008).

There are several characteristics for case studies that distinguish it from other designs. The first is the objective of case studies, which is the development and construction of a theory. The second characteristic according to Reige (2003) is that unlike other qualitative researches that require no prior theory, case studies requires a

high level of prior theory. Also case studies are not arbitrary methods but are rather structured as they follow standard procedures such as coding the qualitative data, combining, comparing, and contrasting the information to make meaning out of it. Finally, the strength of case studies lies in its replication (Reige, 2003).

Gordon (2010) recognized two types of qualitative research. The first is the positivist qualitative research, which is a rational form of gathering information, but mainly concentrates on the question of why things happen. The second type is the dynamic qualitative research, which depends mainly on observational approaches. In the positivist qualitative research the general assumption is that respondents say what actually happens, whereas the dynamic qualitative approach assumes that what the respondents say might not be all true due to the effect of bias on the respondents. In this dissertation the effect of bias whether from the respondents or the interviewer are both acknowledged and considered as a limiting factor.

Dynamic qualitative research encourages the participants to dig deep into their inner self and to find answers to questions by personal observations (Gordon, 2010). This also means not only trying to answer the *why* question but also *where, how, what, who,* and *when* in addition to why. The main purpose of this case study was to address as many aspects of the problem as possible using a qualitative open-ended approach.

Appropriateness of Design

Despite the positivist disputes, case studies are considered reliable and valid research methods (Wainwright, 1997) that add value to the knowledge (Golafshani, 2003) and are more appropriate for investigating things that cannot be measured (Morse, 2006). Quantitative research usually follows a positivist approach, whereas the qualitative

research follows a more naturalistic approach. Qualitative researchers aim to find knowledge and understanding of a certain phenomenon and seek evaluations of similar situations. The data used and gathered in qualitative research is unquantifiable but rather explorative; nevertheless, like quantitative methods they must also be tested for quality (Golafshani, 2003).

The positivist systematic quantifiable process dehumanizes human behavior as it does not explain feelings or social reality. Anti-positivism does not use any outside knowledge gathering tools, rather the researcher acts as the knowledge source through personal experiences. Post-positivism has three schools of thought, which are phenomenology, ethnomethodology, and symbolic interactionism (Dash, 2005). All these schools emphasize the importance of daily human interaction with the environment. Post-positivism encourages qualitative research to be used to study the different sociological attributes by investigating personal behaviors and reactions rather than quantifying the constructs (Reige, 2003).

A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Ridder, 2012). Case studies have thus been used in numerous occasions when a particular condition is unexplainable or is unjustified empirically. A case study must satisfy three rules, (a) describing, (b) understanding, and (c) explaining (Tellis, 1997). Case study design was specifically chosen for this dissertation to be able first to describe the problem that exists from different points of views especially from the customers' perspectives, then to understand how the problem occurs and finally to explain why it occurs. By doing these three steps

leaders will be able to know how and why the problem exists and occurs and will be able to find ways of solving or reducing the problem of churn.

Attempting to use quantitative research to answer the research question would have failed to present the human perspective. Moreover, the results gathered from a quantitative research would just be a replication of prior research that can only measure a few factors which in almost all previous cases found that the assumed factors were indeed affecting churn. As explained in the previous chapter, researchers who used quantitative methods had reported in their limitations that they failed to find reasons for why churn occurred. In addition, they stated that their results were not generalizable due to psychological and cultural effects. These psychological and cultural effects that had caused previous quantitative research to be ineffective were the main driving reason for this dissertation.

A qualitative method was necessary to answer questions beyond the measurement of quantitative methods. Moreover, a case study was the best design to suit this research as it captured a single incident in a specific region. The problem of churn cannot be characterized as a phenomenological problem and thus other qualitative designs had been deemed inappropriate. Thus a qualitative case study was the best method to investigate the causes of churn and answer the sub-questions described hereunder.

Research Question

The research question in this dissertation was, what are the causes of churn in the telecommunication industry in Kenya? A brainstorming session on the question led to three different criteria. Each criterion was crystallized into an objective or a sub-question that needed to be investigated separately.

Behavioral patterns resembled the first objective. Behavioral characteristics involve the reasons customers hold multiple SIM cards, how often they interchanged networks and how loyal the customers are to the carriers they were using. Open-ended questions were used to understand in details why customers tend to churn. Knowing the causes can either justify leaders' worries or identify churn as a problem that leaders should not be concerned about. A case study was the best methodology to be used for investigating such a phenomenon.

The second objective included publically available secondary research available on the customers' usage. The second sub-question involved the *economic patterns*, such as the call plans, tariffs, and the promotions available from different carriers. It was reported that businessmen and financially capable people may have less tendency to churn (Ranaweera, 2007). Thus the interview questions in appendix B also included a ranking of economic status or income of the customers to investigate this concern. This sub-question also related to the effect of marketing on customers' churn and how promotions affect the churn patterns. The data used for this sub-question was gathered from carriers' and regulator's publicly available reports and acted as a method of triangulation to the information gathered for the first objective.

The third and last objective investigated the *carriers' policies* such as internal organizational policies (Katsianis, et al., 2007), quality of service (Reichheld, & Sasser, 1990), types of products and bundles (Withiam, 1999; Myron, 2004), in addition to network advancement (Harno, et al., 2009). These factors are of concern as they had been reported to have direct influence on churn. Thus leaders can unknowingly affect churn positively or negatively by implementing different strategies. This third objective was

investigated via a collection of direct open-ended question interviews with one manager from each carrier and by the use of secondary collected data from the online published reports of carriers.

Population and Sampling Rationale

The population included in this dissertation constitutes every person within the geographical scope who owns a SIM card and can churn either by swooping the SIM card to another network carrier or by using an additional carrier. Dual and multiple SIM card holders are reported to be increasing; however, there is no clear statistical data on how many customers exactly own multiple SIM cards. Research reported that the customers who hold dual SIM cards are as many as 25% (Sutherland, 2009). Using that figure as an assumption, the population under study becomes 7,425,859 customers.

Population

In qualitative in-depth case studies the population, no matter how big it is, does not necessarily need to be fully represented. Unlike quantitative research where proportional sampling adds to generalizability, the sample in case study should be just sufficient to investigate the problem with all its faces (Wainwright, 1997). The sample should not be too large to the extent that it becomes difficult to undertake an in-depth analysis, nor should it be too small to the extent that makes data saturation difficult. Because qualitative research and specially case studies are meant to investigate a special case in-depth through multiple data collection instruments, the sample does not necessarily have to be in proportion to the population.

The population of this research is hard to accurately indicate due to the conflicting census reports, however using the official CA 2013 report the mobile customers were

reported to be 29,703,439 and by assuming 25% of the totally reported SIM card holders which were reported by Sutherland (2009) and RIA, the total population under study would be 7,425,859 customers. This population is enormously large even for a quantitative study. Additional screening questions reduced the population further by removing minors under 18 years old and reducing the geographical scope limiting the research to Nairobi city only had a great effect on the overall population targeted. Unfortunately, there are no indicative percentages of minors using mobile phones, that is why it became even harder to accurately calculate the total population.

Sampling

Although many researchers and authors considered sampling and sample size a quantitative issue, sampling is also critical to qualitative research but in a different perspective. Sampling is mainly related to quantitative research because sampling and determining the sample size are both necessary for statistical generalizations. However, for qualitative methods the researcher is usually not interested in making generalizations but rather to identify the pattern for a single or multiple cases.

It was argued that qualitative methods tend to make analytic generalizations in a way that shows how the selected case fits with the general constructs (Gelo, Braakmann & Benetka, 2008). Yet even in qualitative methods the researcher should continue collecting information until data saturation where the information becomes redundant. Thus, if a reasonable number of participants are chosen the quality of the research becomes higher. The act of choosing a certain number of cases is, in fact, a sample size consideration (Onwuegbuzie, & Leech, 2005).

Who to interview is also an issue in qualitative research as much as it is with quantitative methods. In most cases, qualitative methods do not demand randomized samples; however, the researcher must choose the most appropriate candidates who will provide the most relevant information to the study (Onwuegbuzie, & Leech, 2005). In this case study the pilot sample was chosen according to convenience, in other words, the researcher chose participants who have churned or are currently churning. The pilot sample was chosen from different economic and social status, the sample included a variety of people such as housewives, students, casual laborers, unemployed people, a widow, a driver, an accountant, a secretary, and business owners.

Direct customer interviews were also conveniently chosen from four public locations in Nairobi where the researcher had the capacity to recruit different participants without requiring prior approvals to use the location. The participants had to first provide their written consent to participate in this dissertation by signing on the consent form (Appendix C). Pilot interviews were not recorded as the data collected was irrelevant; the purpose was only to acknowledge the reliability of the data collection tool. The customer interviews however were recorded and no personal information from the participants was required. Each recorded interview was given a numeric code. Coding of data was important in concealing the participants' personal and private information and to allow for a neutral analysis of data (Brown, 2008).

Onwuegbuzie and Leech (2005) suggested different sample sizes for qualitative methods, such as for case study it was is recommended to be between three to five participants, whereas phenomenological studies range from six to 10. Grounded theory increases up to 30 participants in some cases, whereas ethnographic research was

recommended to be at higher values of up to 50 interviews to be conducted. Finally, focus groups have been reported to be best situated between six to 12 participants.

It was also reported that better response rates were achieved when the participant knows the researcher. In addition, by explaining the purpose of the research and the importance of the participant in the research, it is more likely that the participant will complete the interview. Moreover, the more the topic is relevant to the respondents, the more likely the willingness to participate. Response rates have also been reported to be higher when participants are assured of anonymity and confidentiality (Brennan, Benson, & Kearns, 2005). Thus all the above points were included in the introduction to the interview and in the informed consent.

Increasing response rates can be achieved by providing an incentive for the participants (Brennan, Benson, & Kearns, 2005). The customers who use dual SIM cards are assumed to be over 7.4 million customers, thus even if the response rate is low, interviewing up to 50 customers would not have posed any problem. The interview questions in Appendix A were grouped into specific formats to increase the response rates. Finally, multiple recruitment locations also increased the response rate and ensured that a large enough sample was achieved.

Informed Consent

Informed consent is a document or statement signed by the participant to allow the researcher to use the data provided by the participant in the research. This document also described the purpose of the study, potential harm to the participants, and acknowledged the participants willingness to participant. The federal regulations demand that participants are provided with free rights to participate willingly in the research

process and are informed of all the processes that will take place during the interview/experiment, in addition to providing explicit information on the risks or benefits that will come to them as a result of the research (CITI, 2013).

Appendixes C and D were designed to inform the participants of the purpose of the study. Participants were asked to freely and willingly participate in the interview process without any limitations or consequences. Participants were also free to refuse to answer any or all part of the questions and may withdraw from the interview at any time without indicating reasons. After the data collection was done, the participant were provided with a phone number and email address to contact the researcher in case the participant decided to withdraw from the research, in which case the data regarding this participant would have been excluded from the analysis.

Confidentiality

The names of participants, personal information, their detailed address, or any information that can identify the participant were not required in the direct interviews and thus the identities of the participants were fully concealed. A serialized code was given to each participant to link the results to the participant. Thus participants were coded CI01, CI02,CI 03and so on, each number corresponded to a certain participant. Manager interviews were coded according to the name of their carrier they were representing, pilot interviews were coded PI#, and customer interviews were coded with CI#. This file was password protected and will be securely saved in a hard disk for the period of three years with the researcher after which the data will be permanently deleted.

For the one-on-one interviews with managers, the participants were informed that their personal information would be concealed and kept in password protected files.

Again the information was coded in the same way to hide any personal information from the interview but the name of the carrier would be mentioned in the analysis as per the approval provided in the third section of the PRN (Appendix E). These codes were kept in password protected files on the researcher's computer and will be held for the period of three years.

Geographic Location

The geographical scope of this dissertation is the capital city of Nairobi in Kenya excluding all its other cities and villages; however because the geographical variable is only a single variable and due to the limit of time and finance, the interviews were only conducted in Nairobi. Qualitative case studies do not rely much on wider geographical coverage or randomization but rather aim to solve a certain problem through in-depth investigation with a few participants. The pilot studies and the customer interviews were all done in the city of Nairobi, the capital city of Kenya. The four interviews with managers were also done in Nairobi where all the head offices of the four carriers are located. Appendix E shows all the permission to use premises and authorization from the carriers to use their data in this dissertation. All interviews were conducted in English to avoid any translation errors and because the literacy rate in Kenya is quite high (KNBS & MLE, 2011), this restriction did not pose a great concerns. Thus participants who could not speak English were not invited to participate in this research.

Data Collection

For a case study, the data collection should use a combination of documents, archival records, interviews, direct observation, participant observations, and physical artifacts. The data collection should be done in three steps: data reduction, data display,

and conclusion drawing/verification (Ausband, 2006). For this case study, the data was collected via different methods. The first was through document reviews from publications and online data found on the websites of the carriers and regulator. Direct open-ended one-on-one interviews with managers from carriers then followed. In addition, a qualitative open-ended customer interviews conducted by the researcher took place, preceded by one-on-one pilot interviews conducted by the researcher with customers to increase rigor of the tool. These three methods of data collection reinforced triangulation of data which was reported to increase rigor of the study (Lee, Mishna, & Brennenstuh, 2010).

Technique

Interviews whether open-ended, focused, or structured, are considered the most essential source of information in case studies. There are four main principles to follow when implementing a qualitative research (a) to show that all the evidence was used in the analysis, (b) to acknowledged bias and opposing interpretations in the analysis, (c) to address the most significant aspect of the case study, and (d) to use the researcher's expert knowledge to synthesize and further the analysis (Geering, 2006).

The pilot interviews were open-ended face-to-face interviews that were used to collect as many answers related to the problem as possible. In this research the pilot interviews were used to refine and adjust the data collection tool to higher quality standards. The pilot interview also ensured highest rigor of the data collection instrument. Nevertheless none of the data collected from the ten pilot interviews were used during the analysis phase. In other words, the pilot interviews were only used to check for validity and reliability of the instrument used for data collection.

The use of open-ended questions was the core of this dissertation as it assisted in identifying the possible causes of churn which differed from one customer to another. Triangulation allowed the researcher to go beyond a single view point (Polkinghorne, 2005). Data triangulation was achieved by gathering answers from multiple sources related to the problem such as, the customers, the managers and the carriers via their online published information. Further triangulation was also achieved by using multiple data gathering techniques such as one-on-one interviews, literature research, and publicly available documentation provided by the carriers and the regulating body (Tobin, & Begley, 2004).

Type of Data

Qualitative research had been politically fought by empirical positivists to be an invalid concept (Ceglowski, Bacigalupa, & Peck, 2011). However, this has not stopped qualitative researchers from expanding the research base and adding more to scientific knowledge. With case studies there is an inter-weaving of inductive and deductive logic that takes place. The aim of case studies is not to test a preconceived hypothesis, nor is it to adopt an entirely open-ended approach. The researcher reviewed the academic literature, and acted as a participant observer on the field of study. After the synthesis of these sources a mixture of observations and theoretical works were conducted until a final model was constructed. The interviewer had sufficient involvement with the participants, although this might have increased bias or influence; however, in qualitative studies to get in-depth information such involvement was necessary (Wainwright, 1997).

Two types of data were collected in this research, the first was the secondary data collected from literature research as guidelines, followed by a detailed review of the data

found on the carriers' websites and publications. This type of data was very theoretical and provided much statistics but no feelings. Some of the literature data may have represented ideal or restricted situations; and some of the website and publications may have been just provided for marketing and thus may be misleading if analyzed without primary data collection.

Primary data collection occurred in two steps also, the first was particularly related to the carriers and that data was collected from managers mainly chosen from the marketing or technical departments of carriers. These were done via one-on-one, face-to-face interviews with open-ended questions that provided freedom for the manger to speak about the problem of churn. The questions were designed to challenge the manager to brainstorm and provide as many ideas and opinions as possible. The interviews with the managers were meant to compliment the secondary data collected from the websites and publications.

The second set of primary data was collected from customers of different carriers via direct customer interviews and aimed at representing the customer's perspective of the problem. Pilot interviews first took place to ensure the reliability and rigor of the data collection instrument. The customer interviews were also open ended interview as shown in appendix A.

Process

Case studies are split into several components each providing some choices for the researcher undertaking case study methods. The first component is the subject which is the topic of the case study, subjects can be local, key, or outlier subjects. The second component is the object, which develops as the study goes deeper in its investigation, in

other words in case studies the object is not well-known. The object emerges as the case study develops; thus the object becomes the analytical frame within which the case is viewed. The third component is the purpose, which could be intrinsic, instrumental, evaluative, exploratory, or any combination of the four. The fourth component is the approach, which could be to test a theory, to build a theory, or a descriptive/illustrative approach. Based on the components the methodology is decided and the process starts. The process can either be a single case, which also could be divided into retrospective, snapshot, or diachronic cases, alternatively a multiple case study could be nested, parallel, or sequential (Thomas, 2011). Thus based on this typology, this case study is *local* in subject as it investigates a local issue, *exploratory* in purpose as it investigates the causes of a problem, *theory-building* in its approach as it is aimed at building a model as an end result, and its process is a *single snapshot* because it only investigates a specific period of time.

The process adapted in this dissertation started with the carriers' viewpoint on the problem by secondary data collection from the different publications and websites of the carriers and the regulatory body, these data are available online and permission had been granted for their use (Appendix E). Interviews with one manager from each carrier as shown in Appendix B followed to complement the secondary data collected earlier. From the customers perspective a pilot survey was conducted first to refine the data collection instrument and increase rigor, followed by open-ended face-to-face interviews as per appendix A. All the questions in the open-ended interviews had been prepared based on the literature research and were subjected to slight alterations and additions after the pilot interviews were conducted as further explained in chapter four.

Data Saturation

Data saturation, theoretical saturation, and information redundancy were achieved before assuming that the sample size was sufficient. Therefore, sampling is and will always be an important aspect of all types of research even if qualitative researchers chose to ignore it (Onwuegbuzie, & Leech, 2005). Asking respondents whether they would like to add any comments or had further concepts or categories in mind ensured that saturation was achieved (Palka, Pousttchi, & Wiedemann, 2009).

Research by Guest, Bunce, and Johnson (2006) reported that in qualitative in-depth research the first six interviews can yield up to 73% saturation whereas after 12 interviews 92% of the answers are already extracted. In other words, for qualitative research it is sufficient to only conduct 12 in-depth interviews to reach near saturation level, which is highly sufficient for data analysis. Their research also supports findings of Romney, Batchelder, and Weller (1986) and Bertaux (1981) however other research recommend a much higher sample of 30 and above (Graves, 2002; Bernard, 2000; Morse, 1994; Creswell, 1998). To ensure that saturation was achieved this dissertation was designed to interview a sample size of 20-50 participants. The budget and time allocated for this research was unable to accommodate data collection beyond the 50 participants. When conducting the interviews data saturation was fully achieved by the 29th interview and thus data collection was deemed sufficient

Instrumentation

Structured interviews are considered not very helpful in qualitative research as they direct the participants to choose from predetermined answers. Whereas this might be necessary for validity in quantitative research; it however destroys completely the aim of

qualitative research. The validity of particular research findings ultimately depends upon trust in the researcher's integrity (Wainwright, 1997). The instrument used in this dissertation was a qualitative open-ended interview (Appendix A) that was mainly used for in-depth understanding of the problem and why the problem occurs from the customer's perspective.

Pilot Study

In case studies, pilot surveys are necessary to refine the instrument (Roberts, Wallace, & O'Farrell, 2006). The pilot study in appendix A is a broad, open-ended, one-on-one interview conducted with ten participants conveniently sampled to include most demographical representatives who hold dual or multiple SIM cards such as housewives, students, casual laborers, unemployed people, a widow, a driver, an accountant, a secretary, and business owners. The purpose of the pilot study was to refine the instrument and get the maximum number of factors that are thought to have an effect on churn. The pilot interviews took approximately 30-45 minutes in which the participants were free to discuss and explain in their own words what they felt and thought are the reasons for their usage of multiple SIM cards or swapping from an old carrier. The pilot study addressed the three sub-questions of the dissertation. Data collected from pilot interviews were not used in data analysis. The information from the pilot study was only meant as a means of confirming that the interview questions are addressing the right concerns and was disregarded during the data analysis phase. It was thus very important that the pilot test was done to maximize the utilization of the interviews.

Document Review

All four carriers and the regulator had provided a formal, written document of acceptance to utilize the publicly available published data and information on their websites. These documents and websites provided an overview of the statistical background and the history of the carriers' performance and expansion. In addition the document review provided information on the call plans, the promotions, the pricing schemes and other marketing and economic information that have been relevant to this dissertation.

Triangulation

Triangulation strategies are used with case studies to ensure accuracy and validity of the process (Baker, 2006). However, because qualitative research follows the realism approach, in other words different perspectives may provide different results or opinions, thus, even if findings from triangulating data were not identical, that does not disqualify trustworthiness or dependability of the research (Golafshani, 2003). Triangulation can be achieved by gathering information from different groups such as focus-group interviews, individual in-depth interviews, literature research, or other secondary data (Palka, Pousttchi, & Wiedemann, 2009). Triangulation can also occur at different levels such as the level of data, theory, investigation, and method. Therefore, regardless of the level, triangulation increases internal validity and credibility which will be discussed later under the rigor section.

A Case Study Database (CSD) is another way of ensuring quality by showing the raw data before analysis. CSD allows any researcher to replicate the analysis and ensures that the analysis was based on factual true gathered material. Increasing the number of

interpreters of the data, which facilitates triangulation, can increase the credibility and internal validity. Finally, the last suggestion to increase rigor is by allowing the participants to read the interpretations that permits them to confirm or contradict the findings (Lee, Mishna, & Brennenstuh, 2010).

Unfortunately, not all these rigor tests could be applicable in this dissertation due to time limitation, thus in this dissertation triangulation was limited to the following: (1)collection of data from both primary interviews and secondary resources such as websites and publications, (2) collect data from different perspectives and points of view, in this case the data was collected from the customers, managers, and from the carrier's through their websites, (3) literature research was also another way of triangulating the data since the information provided from the different sources was also compared to those gathered from literature research. In other words triangulation was done on the data and investigation levels but not on the method and theory levels.

Data Recording and Privacy Protection

Data was collected in three different phases. Although pilot interviews (appendix A) did not count as a data collection instrument but were rather used to refine the instrument, and although the data collected from pilot interviews were not used in analysis; however, ensuring the privacy of the participants was also adamant at that phase. During the open-ended pilot interviews, the names and demographical data of the participants were not required and thus their privacy was preserved. The sample of participants in the pilot was based on convenient sampling, in other words, the participants were chosen based on the ease of access and their suitability to include as many demographical representatives as possible. The sample required for the pilot

included people such as housewives, students, casual laborers, unemployed people, a widow, a driver, an accountant, a secretary, and business owners. The interviewer intentionally and clearly stated that no personal details were to be discussed during the interview. The pilot conversations were not recorded but rather detailed notes were taken of how well the participants understood the interview questions; however this was still done after the participants' written consent. The notes were safely kept in a locked drawer with no access to others

The second stage was the secondary data collected from publications, carriers' websites, and regulators statistical information. Because all these data are publicly available and are accessible by anyone, they did not require any protection. Nevertheless, because these data might be misreported, or insufficient for analysis, further interviews as shown in appendix B were held with one manager from each carrier.

During the face-to-face interviews with the managers from the different carriers, the names and positions were obviously known to the interviewer. However, these interviews were mainly aimed at clarifying the carriers' actions toward the problem and their understanding of it rather than the managers' own views. Thus these interviews were meant to support the publicly available online data, such that the managers' opinions were taken as official information provided by the carrier. These interviews were not audio recorded; rather the interviewer used notes to reflect on the data gathered from the carriers' websites. During the coding process, the names of the participants were concealed and were all referred to in masculine form for further protection. The files were converted into password protected word files and safely kept in the interviewer's custody for the period of three years.

Finally, during the direct customer interviews, the conveniently sampled participants were accessible to the researcher and thus coding of the participants was necessary. The researcher did not request for any personal information or the name of the participants. The interviews were audio recorded after the participant's approval by signing the consent form (appendix C). A smart phone with integrated recording software was used to do the recording. The interview was conducted without any occurrence of the participant's personal information, and any attempt to re-contact the participants will not be possible. In the cases where data from the participants are missing such as when the interviewer forgets to ask a question in the interview or further clarification are required from previous participants, the interview would have been deemed as incomplete and the data of that participant would have been discarded from the study and the file would be erased from the database. All recorded voice files were transferred from the recording devise to the researcher's personal laptop and saved in a password protected file even though they do not contain any way of identifying the participant. After completing the analysis phase the password protected files were transferred to a CD that is kept in a secure location in the private residence of the researcher and the files will be erased from the laptop for enhanced security measures.

Rigor in Case Studies

Without rigor, qualitative methods become worthless to the community of science as the knowledge that it will add could be factious. Thus rigor is the means by which integrity and competence are verified. Credibility, transferability, dependability, and confirmability have been commonly used words in qualitative research as replacements for validity, reliability, and generalizability of quantitative methods. Other terms such as

goodness have also been used to describe rigor (Reige, 2003). Although literature provides different suggestions to ensure the high quality of qualitative methods; however, in case studies the researcher constantly moved back and forth between design and implementation (Tobin & Begley, 2004), thus there is no coherent set of tests that can be used in case study research mainly because each case study is different from the other.

In quantitative research, the concentration is on facts and relations, thus using quantifiable figures and numbers, then analyzing the numeric data to produce statistical results. Thus reliability and validity becomes measurable as the variables are easy to quantify and measure. Validity in quantitative research resembles the accuracy of the measurements whereas reliability is concerned if the results can be replicable (Golafshani, 2003).

Qualitative research usually uses open-ended questions, and thus may result in answers that are hard to quantify or code into numeric values. Thus in exchange for the quantitative reliability and validity, qualitative research uses credibility, transferability, and trustworthiness. Other terms such as credibility, neutrality, confirmability, consistency, dependability, applicability, and transferability can be considered as criteria for quality measurement in qualitative research (Golafshani, 2003). In this dissertation pilot interviews had been used to enhance the reliability and validity of the data collection instrument. Moreover, triangulation by using multiple perspectives of the problem, in addition to using multiple data collection instruments such as open-ended customer interviews, one-on-one interviews with managers, and secondary data analysis from online and published data by the carriers and regulator served also as quality tests for reliability and validity.

Reliability

Reliability is when the data gathered from a research is of high quality and rigor; in other words, the data gathered can be relied on and considered to be accurate and true. Reliability depends on the procedures and the general rules followed to implement the case study (Tellis, 1997). Reliability in qualitative studies corresponds to trustworthiness where the researcher as a tool ensures that the quality of the measurement is of high quality and rigor. Testing the quality of qualitative research is difficult; however, it is noted that if the research results are credible and defensible, then trustworthiness can be achieved (Golafshani, 2003). Reliability also corresponds to dependability, which can be demonstrated through an audit trail. This occurs when the documentation of data, methods, processes, and end results are available for others to examine and follow the same procedures (Tobin, & Begley, 2004). Reliability in this research was achieved by using pilot interviews that were not only helpful to refine the instrument but ensured that the data gathered from the participants was accurate. For example when the researcher found during the pilot tests that all the participants tended to answer a specific question in an exact manner, rewording of the question was necessary. Thus by using pilot studies the reliability of the gathered data was achieved.

Validity

Validity is the process that ensures that the results acquired from each question is what is required and expected of it. Pilot studies are aimed to improve validity by measuring the type of answers provided as a result of asking certain questions. By refining the questions and ensuring they are valid enables the duplication of the study while providing similar results.

Validity in qualitative research falls in four main categories (a) *descriptive validity,* which is the validity of the descriptions of settings and events; (b) *interpretative validity,* which is the validity of statements about the meanings or perspectives held by participants; (c) *explanatory validity,* which is the validity of claims about causal processes and relationships, including construct validity as well as causal validity; and (d) *generalizability,* which is the extent to which a researcher can generalize the account of a particular situation or population to other individuals, times, setting, or contexts (Gelo, Braakmann & Benetka, 2008).

On the other hand, validity also can be split into four other categories, (a) c*onclusion validity,* which measures the relationships between variables; (b) *internal validity*, which tests if the relationship between the variables is casual; (c) *construct validity*, which identifies if the research had measured the outcome to be measured; and (d) *external validity,* which measures if the research results can be generalized to include other locations, people, different times (Staines, 2008). It is worth noting that the above types of validity come in order and pile up on each other forming a ladder that eventually arrives at acceptable valid assumptions

Internal validity. Internal validity aims to ensure that the researcher has accurately represented the respondents' views without altering them due to bias. Dependability is the closest word that corresponds to validity in qualitative research and serves to prove that the research results can be consistent in other locations with similar conditions (Golafshani, 2003). *Credibility* however corresponds to internal validly, which is demonstrated through a number of strategies such as member checks, peer debriefing, prolonged engagement, persistent observation, and audit trails (Tobin & Begley, 2004).

Due to the nature of qualitative research many variables are uncontrollable or sometimes even unknown until the research is completed. Nevertheless, to target maximum internal validity in this research and to add rigor to the instrument, the following conditions had been recognized.

Subject variability. The participants who were interviewed were selected based on convenience such as geographical location, availability, and time. The subjects were recruited from public places where the researcher was not required to get prior access approval or further permissions to conduct the research. Nevertheless the interviewer attempted to select participants with different demographics such as tribes, education levels, occupations, and economic status.

Size of subject population. The size of the population had been defined as the number of customers who hold more than one SIM card or have churned, there is no guarantee that this population size will not change as the penetration rate and the customer base for telecommunication carriers are rapidly increasing.

Time given for the data collection or experimental treatment. Time of the data collection was in March when the school and universities had already opened for the second semester. There was thus a high possibility that there would be a number of new promotions targeting the back-to-school period, it is advised that if this research is to be replicated similar conditions are chosen.

History. The telecommunication industry is characterized by high flux and innovation. Therefore, there is no guarantee that the time after which this dissertation has taken place will not show different characteristics. New research must always take the historical facts into their consideration.

Attrition. Any participant who has not completed the interview for any reason was disqualified and discarded from the analysis and did not count towards the sample. To avoid falling short of sufficient data the collection continued with qualifying interviews until saturation was achieved at 29 interviews.

Maturation. Once the data becomes repetitive, saturation is achieved. Although different authors have set different standards for the amount of interviews to be conducted in a case study, the process predetermined in this research was to complete the 20 interviews first, then if saturation had not been achieved more interviews would be conducted up to a maximum limit of 50 interviews.

Instrument/task sensitivity. This research involved high level of human interaction. The interviewer was required to conduct the interview effectively and professionally to avoid bias. The data collection instrument had been well designed and was further enhanced after the pilot interviews.

External validity. External validity refers to the generalizability of inquiry, in other words how the case can be transferred in other cases. Le Compte, (2000) suggested that this can be achieved by asking respondents about their view of the final created model, however, it is not scientific to rely on subjective responses. Transferability, which corresponds to external validity, is concerned only with case-to-case transfer. Because there is no single correct or true' interpretation in the naturalistic paradigm the transferability of the study becomes very difficult (Tobin & Begley, 2004).

To allow the transferability or external validity of this research, the following conditions were taken into consideration:

Population characteristics. The interviews excluded any minor citizen and prisoners. The population only included those living in Nairobi. The sample was a nonrandom conveniently but carefully chosen sample which was attempted to be as inclusive as possible to include the different demographics and economic status of the population.

The effect of the research environment. The telecommunication environment is an ever changing one, and probably has much faster flux than other industries. Thus the environment does have a great effect on the research subject and is quite difficult to control and must be taken into consideration when replicating this research.

Researcher effects. In qualitative research, the researcher is the most influencing factor. The interviewer must be as neutral as possible by recognizing and acknowledging the possibility of bias especially during data collection phase. The interviewer must not try to imply any kind of answers or ask the question in a way that might direct the participant towards a specific answer.

Data collection methodology. Data was collected via three different methods, (a) online data available on websites and publications, (b) one-on-one interviews with managers meant to support the data gathered from carriers' websites preceded by a pilot study to ensure validity of the instrument, and finally (c) qualitative open-ended face-to-face interviews. The variable data gathering methodology supported triangulation and thus added much rigor to the process.

The effect of time. Like all case studies, time is a very important variable that changes the results of any study. Any replication of this research must take into account

the variable effect of time which is uncontrollable and cannot be considered a constant in this research.

Generalization

Gary (2010) wrote that as long as people look at case studies as a means to induce generalization, they will never get to know the real power of case studies. Erickson (2012) also supported that qualitative research is not only meant to report behavioral actions but also describes social action. Describing a case through qualitative research is not just for casual claims but rather to describe and analyze a particular case closely. Therefore, the aim of case studies is not to generalize beyond the case itself but to investigate and discover patterns within the case, thus focusing on internal generalization rather than on external generalization. The reason social science fails to discover uniform laws of social process that can be generalized is that conditions are contingent in a way that even small variations result sometimes in big difference (Erickson, 2012).

However, there has been a general misconception that one cannot generalize from a single case; therefore, the single-case study cannot contribute to scientific development (Flyvbjerg, 2006; Delmar, 2010). Halkier (2011) preferred to use the term *analytical generalization* rather than *qualitative generalization* as it differs from the universalizing generalization in quantitative research. Analytical generalization is more specific and context bound. Generalizing on the basis of qualitative studies must recognize and try to represent the dynamisms, ambivalences, conflicts, and complexities that constitute various overlapping contexts and the knowledge-production processes (Halkier, 2011). In other words, generalizing in qualitative studies tends to be a representation of the flux nature of social and humanitarian studies.

Bias

Because bias is an important aspect that can distort data collection and analysis, identifying the sources of bias is an important first step in data analysis. *Selectivity* is an unconscious selection of certain data based on tacit habits and preferences. Selectivity is a common bias that is hard to solve; however, even though it cannot be prevented, understanding the effects of tacit and formative selection on bias is important to offset its effect (LeCompte, 2000). There are many other kinds of bias such as (a) *confirmation bias*, which occurs when a researcher evaluates evidence that supports his or her preconceptions differently from evidence that challenges these convictions; (b) *rescue bias*, is the attempt to evade evidence that contradicts expectation; (c) *auxiliary hypothesis bias*, is a form of rescue bias; however, instead of discarding contradictory evidence by seeing fault in the experiment, the auxiliary hypothesis introduces ad hoc modifications to imply that an unexpected finding would have differed depending on the condition; (d) *mechanism bias*, occurs when a researcher becomes less skeptical when underlying science furnishes credibility for the data, thus assuming that previous research are true beyond doubt; (e) *time-will-tell bias*, is the phenomenon that different scientists need different amounts of confirmatory evidence; and finally (f) *orientation bias*, is the bias that occurs when the hypothesis itself introduces prejudices and errors and becomes a determinate of experimental outcomes (Kaptchuk, 2003).

Some of the above-mentioned biases only affect quantitative research; however, the knowledge of bias and the acknowledgment of its existence is the only way to avoid it as much as possible. Jones (2009) suggested three methods to avoid method bias, a) to

use multiple measuring methods, (b) to use a multi-trait, multi-method matrix to correlate the constructs, and (c) to use triangulation for quality checks.

Although different approaches by different researchers to solving the bias problem had been suggested; however, each method might not be applicable in other cases or might be difficult to replicate on other research (Jones, 2009). Another way to limit bias is by applying *confirmability*, which corresponds to objectivity or neutrality, and this occurs when establishing that data and interpretations of the findings are not derived from the inquirer's own assumptions, but rater derived from the data (Tobin, & Begley, 2004).

Self bias is unavoidable and almost impossible to neutralize due to personal assumptions and traits, it can only be acknowledged and taken into consideration during analysis. Self bias of the researcher can be avoided by consistency of the researcher's voice and the use of factual data. Participants' bias can occur when the participants try to please the researcher with the best answer they think the researcher wants to hear. This was avoided by speaking with a neutral tone as possible during the interview to avoid implying any preferred answer (Mishna, & Brennenstuhl, 2009). Finally, triangulation of data from several sources and using several methods was meant to ensure consistency of data gathered and provided sufficient proof of the reliability and validity of the method and the data gathered.

Data Analysis

According to LeCompte (2000), the process of qualitative research is similar to a jigsaw puzzle where pieces of information are gathered, organized, grouped, and

connected together to form a full picture. In qualitative research the analysis follow a very similar procedure. This procedure involved the following steps

Data Collection

Data collection had been discussed in details in previous sections, nevertheless for the purpose of analysis; notes were always taken during data collection. Important information such as the body language of the participant during face-to-face interviews were noted then transcribed into NVivo10® software. Links between ideas, assumptions, and different perceptions that were made prior to data gathering were very important in linking the data and tying the different information to each other. Open-ended questions were used to ensure that the participants had expressed all their concerns freely and that all aspects of churn were inspected even if they had not been previously indicated in literature reviews or pilot interviews.

Data Organizing

The first step started by organizing the data, such as cataloguing, labeling, and indexing. Using NVivo10®, the interviews from different participants were manually filtered and organized to define the different variables that are causing churn. These variables were coded into nodes. Nodes are containers that store information sources and gathered material about a specific topic. Each topic was stored in a unique node, but could also be replicated into other nodes. For example if a customer considers the weak customer support as a cause of churn, then this specific piece of information was allocated to a node named customer support and to another node called negative causes of churn. The more variables recognized from interviews the more the number of nodes indicating the different factors affecting churn.

Data collected from management interviews were kept in separate nodes from customer interviews. NVivo10® is capable of automatically sorting the data in written interviews; however, for recorded customer interviews the researcher transcribed them into written files to facilitate the analysis. After the customer interviews were transcribed they were sorted, filtered and grouped in the same way as the manager interviews. Literature research and information gathered from websites, publications, and reports were also grouped into their respective nodes and classifications and the information extracted from them were linked to the variable nodes.

Data Filtering and Grouping

The second step was sorting and filtering the data. Node classifications were allocated to participants to differentiate their demographics. Node classifications included age, economic status, and social status and other demographic information of each participant (Appendix G). This facilitated the grouping of participants according to certain aspects such as their age group or income levels. Nodes were then grouped together using the *collection* function to enable the compare/contrast analysis. The collection function enables nodes to be grouped according to different criteria. For example all factors that have been considered by participants as irrelevant to their decision of churn were grouped in a node collection called *irrelevant factors*. Similarly, the answers from all carriers on a specific question in the manager interview in appendix B were grouped into one collection to facilitate comparison of the different answers of the same question.

Memos were noted down during the interviews to indicate the attitudes of the participants and any expressions or body language that could not be written during the

interview. NVivo10® facilitates the addition of notes to any node, sub-node or collection to provide information from the interviewer's perspective. These notes also acted as reminders during data analysis stage to indicate any comments or explanation of certain points that were not clear in the transcript of the interview.

Compare and Contrast Data

The third step was to compare and contrast the data by setting rules that make the comparison easier and more meaningful. Using the nodes a link was formulated depending on the observation of the correlations of these nodes. Queries, reports, frequency tables, word frequency, classification sheets, text search, and matrix coding provided in NVivo10® was used to find the relationship between nodes. Comparing and contrasting data became easy with the queries and filter functions available in NVivo10®, for example customer comments grouped in the customer node could be easily compared to the carrier comments grouped in the carrier node collection.

Taxonomies were first grouped to form patterns, followed by correlating and grouping them into a structure that helped describe the phenomenon under study (LeCompte, 2000). Some analytic techniques were used such as matrices, arrays, data displays, tabulating frequencies, or using means, variances, and cross tabulations to examine relationships. Pattern-matching explained by Yin (1994) and categorical aggregation (Stake, 1995) are two more data analysis techniques suggested for case studies (Ausband, 2006) although they were not used in this dissertation.

Creating Patterns and Models

The final step was to create a pattern or a model that the data followed from which a theory could be developed. Such patterns were made by taxonomies that match

and correlate with one another. NVivo10® was used in formulating the final model based on the nodes, collections, and their correlations. A great part of the analysis thus depended on the observation of the interviewer and how the nodes are linked together. For example, from literature research it appeared that most of the variables such as price and promotions affected the number of customers, which in turn affect the quality of the network, which loops back to affect the customer service and eventually the number of customer. Although such a model was also highly expected, the causes of churn appeared to be much more complicated that a simple direct relationship. There still could be other outside issues not related to the carrier or the service that cause churn.

Summary

This chapter provided a clear description of the exact steps and actions that were taken during the dissertation, starting from identifying the appropriate population and sample to the best data collection methods and the ethical concerns related to these methods, and finally ending with the analysis of the collected data. The identified population is precisely unknown due to conflicting census information; however, in case studies the sample size is not required to be as much as with quantitative research. The generalizability of qualitative research stems from the value-added to the knowledge of science through the in-depth research of psychological factors and human behaviors that cannot be identified or reflected by mathematical equations or numeric values. The research steps in qualitative research went back and forth between data gathering, analysis, interpretation, and further inquiry until saturation of data was achieved and the causes of the problem were all identified.

The pilot interviews greatly assisted in verifying the reliability and validity of the instrument by ensuring that the right questions were being asked, this assisted in reformatting the questions for the customer interviews. In addition, the open-ended face-to-face interviews with the managers of the carriers that were done at the beginning of the research allowed the research to identify why churn remains a mystery and why several attempts to solve the problem have not been successful as indicated in the literature review. After preparing the interview questions which focused on gathering as much information from the participants as possible, the data was collected, coded, and entered into NVivo10® software. The software assisted in the analysis of data and comparing and contrasting the data to identify the patterns and come up with the model representing what is believed to be causing the problem of churn.

Chapter 4

Data Collection and Analysis

This dissertation aimed at finding all possible causes of churn in the telecommunication industry in Nairobi, Kenya. The literature review in chapter two provided a detailed description of many studies, mostly quantitative in nature. Previous research attempted to investigate the problem of churn by analyzing existing data mines supplied by the carriers. Whereas the information provided was usually of high accuracy, it only represented the 20% of post-paid customers and those on contracts that generate the higher revenue. Until recently, the pre-paid customers had no classification on the carriers' databases. Data gathering for pre-paid customers only started when the regulatory body (Communication Authority) forced a rule that mandated the registration of personal information for all SIM card holders. This action was primarily purposed to prevent fraudulent acts, but also benefited the carriers greatly. The lack of such personal information made the research on churn very scarce and only relevant to a small population. This research has focused on a much wider population and approached the problem of churn from two different perspectives. Moreover, the research used three different methods of data collection for more accuracy and greater in-depth investigation of the problem.

The first point of view is the carriers' perspective. This includes how carriers view the problem of churn and how they react to it. The reaction to churn might not be via contacting churning customers personally. In most cases, carriers react indirectly by providing better network, high-quality services, variety of products, or even through marketing and social media. It was thus imperative that the first step of data collection

involves an in-depth investigation of what each carrier provided. This included investigating products, services, network quality, promotions, and the way they market their products and services. The carriers' websites, published annual reports, and public marketing campaigns were the sources of required information. All carriers and the regulatory body approved data collection from their websites and publications.

The second method of data collection also investigated the problem from the carriers' viewpoint. This method involved direct human interaction with high-level managers working within the carriers. These interviews were intended to support the data collected from the websites and publications. The information collected from managers were not in any way personal, but were rather directed towards better understanding of the perspective of the carrier and its management's viewpoint on the problem of churn.

To understand the causes of churn from the customers' perspectives, a final data collection method was used. A qualitative in-depth interview investigated in detail what was perceived by the customers as the causes of churn. Only customers using more than one SIM card or who have used a different carrier than the one they are currently using were allowed to participate. The population was restricted to Nairobi citizens only; however, the people interviewed were chosen to be as diverse as possible, to include the perspectives of different groups. Ten pilot interviews were conducted prior to the actual data collection phase and with a few days apart to allow for modification of the data collection tool. The customer interviews involved 29 participants recruited from four different locations on three consecutive days as described in the following section.

Answering the Dissertation Questions

The research question was, "what are the causes of churn?" The dissertation topic revolved around the idea of finding the possible causes of churn in the telecommunication industry in Kenya, confined to the capital city of Nairobi. Due to the broadness of the topic the main question was divided into three sub-questions.

The first sub-question investigated the behavioral patterns causing customers to churn. This was addressed through the demographic questions number 1, 2, 4-6 and interview questions number 7- 10, 12-14, 17-22, and 25-29 of the customer's interview (Appendix A). These questions aimed to investigate the reasons for holding multiple SIM cards and what customers consider of value to them. A different perspective was also provided by examining the customer care interactions and the social media pages of each carrier.

The second sub-question addressed the economic causes of churn. The questions from the customer's interview (Appendix A) that pertained to this sub-question were, demographic questions number 3-6 and interview questions number 9-11, 15-16, 23- 24 and 29. The second sub-question was also enhanced by collecting data from the websites and the managers' interview (Appendix B) particularly questions number 1-2, 8-10, and 15.

The final sub-question investigated the effect of the carrier policies and decisions regarding churn. Naturally, the websites and publications fueled most of the answers for this sub-question supported by all the management interview questions (Appendix B). For a further in-depth perspective, questions 16-19 from the customer interviews (Appendix A) were also included. An analysis of the social media websites, specifically

Facebook, was added to get a holistic view of the effect of carrier policies on the problem of churn.

Table 5

The different perspectives and how they answer the sub-questions via various sources.

Sub-questions	*Carrier Perspective*	*Customer Perspective*
Sub-question 1 (Behavioral patterns)	● Social Media	◯ Dem: 1-2,4-6, & Q: 7-10,12-14,17-22, & 25-29
Sub-question 2 (Economical causes)	● Websites, Publications and Reports ◉ Q:1-2,8-10,15	◯ Dem: 3-6, & Q: 9-11,15-16, 23-24, &29
Sub-question 3 (Regulations and Policies)	● Websites ◉ Q: All	◯ Q: 16-19 ● Social media

● Data source1: Literature review, websites, publications, regulatory authority reports, social media and customer care interactions

◉ Data source 2: Manager Interviews — Dem: demographic questions

◯ Data source 3: Customer Interviews — Q: question numbers

The data gathering involved many combined and interlinked topics. Each perspective investigated more than one data source. Similarly each sub-question was also answered through a combination of data sources. The data analysis section could have been formatted based on (a) the different perspectives, (b) based on the sub-questions, (c) based on the different sources of data, or (d) based on the causes of churn found using NVivo10® analysis. Expectations at an early stage of this research were that the causes of churn viewed from different perspectives might not be the same. This created the need

for a comprehensive analysis of the two different perspectives. It was also necessary to analyze each sub-question and its related data sources. Table 5 shows how the sub-questions and the various data sources are interlinked together thus making data analysis a complicated process. The analysis involved a process of untangling the questions and sorting the answers derived from each data source then allocating the different perspectives into particular nodes.

Data Collection and Coding

The data collection was a very involving part of this dissertation as it was done on three levels and from different sources. The first step was to collect as much relevant data from secondary sources as possible, and to have sufficient knowledge about the products and services that each carrier is offering before starting any human interaction. The managers' interviews then followed. Finally, the field research with customers was the most extensive part of this dissertation. In the next section, each level of data collection is explained and analyzed separately to enable better understanding and synthesis of the data. A summary presented the data collected using different methods, the synthesizing of data, and an extensive analysis resulting in suggested possible causes of churn.

Website and Publications

Data collection started with a detailed exploration of the regulatory body and each carrier's website, social media, and publications. Furthermore, data collection extended to local marketing campaigns including billboards, TV commercials, newspaper advertisements, and email interactions with the customer care and Facebook administrators. Data collection consisted of two full days for each carrier .and involved gathering of information from all the links on the carrier's websites. The only excluded

sections were the hyperlinks dedicated for post-paid and business categories. In the following section, an explanation of each carrier's website, publications, promotional materials, and social networks are briefly described. The summary of the analysis shows a comparison table derived from NVivo10® found in Appendix F.

Coding of the data gathered from the different literature sources involved several stages. First, the information was grouped by sorting and matching the services and products provided by each carrier. The information was categorized into 23 nodes on the NVivo10® software. Each node contained information on related products or services. A specific name was allocated to match closely with the description of these products and services in each node. Data gathered from all the carriers were distributed into these nodes. The information from websites transpired into a node classification which holds a summary of the attributes of each carrier. Finally, a comparison matrix known as the classification sheet was extracted from NVivo10® for reporting and demonstration purposes. The classification sheet is a presentation tool that was used for further analysis together with the data retrieved from managers' interviews to complete the picture on the causes of churn from the carriers' perspective.

Regulatory Body and News Updates. In June 2014 the regulatory body rebranded itself from Communication Commission of Kenya (CCK) to Communication Authority (CA). YuMobile implicitly announced on their official YuMobile website that Essar Kenya is selling the company (Essar Telecom Kenya Limited, 2014). A manager at YuMobile indicated that Safaricom will buy the YuMobile infrastructure and Airtel will take over the customer base. Official communication regarding the acquisition was confidential and withheld until the deal was complete. Essar later on announced the deal

on their official website (Essar, 2015). Interviews with YuMobile customers showed that only one of the participants, who works in the telecommunication field, was aware of this acquisition. Thus, it seems that the acquisition deal was done in silence without any publicity to prevent YuMobile customers from panicking. YuMobile remained as a brand and thus is still significant to this research as it still is one of the carriers in the market.

Telecom carriers have been attracting bank customers with their increasingly diverse mobile money services. Concurrently Equity Bank, which is the largest bank in Kenya with a customer base of over 8 million customers decided to compete with telecommunication carriers as a virtual carrier. The new carrier will operate via a new technology paper chip SIM that rides on any SIM card. This new technology will privide customers with mobile money, mobile banking, and can even include voice and data services at a fraction of the cost that carriers charge (Equity Bank, 2013). This service has been halted by a complaint from Safaricom to the regulatory authorities claiming that the new chip might risk the confidentiality and security of their current mobile money services. There are two other mobile money transfer companies that were licensed by the regulatory authority as content providers but not as carriers (CA, 2014a). Because their services do not include any voice or data, they do not fall under the scope of this dissertation.

The annual reports and quarterly reports by the Communication Authorities (CA) still show a high churn rate within year 2013/2014. Reports indicated that in the last quarter of 2014, Airtel lost 3.5% of its pre-paid customer base. Orange on the other hand, made a remarkable rise of 9.4% after it had lost almost 30% of its customer base between 2012 and 2013. Mobile Number Portability (MNP) rates show a slight declined in the last

quarter of 2014; however, the total annual churners swapping carriers via MNP have increased by 10.5% from 2013 (CA, 2014b). Despite the total overall rise, the continuous high rate of change of customer base and the exiting of new entrants, signifies a tough industry with strong competition. This also indicates that the problem of churn remains unsolved.

Safaricom. To understand the causes of churn, data of all the products and services provided by the four carriers was gathered from the carriers' websites and tabulated in Appendix F. It was necessary to compare the benefits that one carrier provides over the others which could have been the motive for customers to churn. This section presents raw data collected from the websites starting with Safaricom, followed by other carriers in order of their customer base. The raw data may seem extensive and meaningless in the beginning. However, at the analysis stage all these data will start making sense when interlinked together with the interview data.

Safaricom is the biggest carrier in terms of customer base. Safaricom provided the most up to date website with the most sophisticated, yet user-friendly technology. Safaricom also added a self-service portal that has a detailed frequently asked question (FAQ) page; and an online chat application to answer all customers' questions. These facilities are easily accessible to customers to enable them to find answers to their problems without having to go through the trouble of calling Safaricom's congested customer call center. For those with difficulties surfing the site or allocating a particular page, an online chat window with an instantaneous response is available to guide the customer to the page where they will find their answers. The customer support response on the online chat varied between immediate response to up to two hours of waiting time.

The website provided detailed description of all the services and products provided by the carrier. A brief summary of each service and product follows.

a) Facebook and Twitter mobile SMS, applicable only to non-data-enabled devices.

b) Online market that promotes the use of free applications such as *MXit* which reduces the cost of text messages by using internet data instead.

c) *Bonga Points* is a loyalty program that allows customers to accumulate points and can use them for purchasing mobile devices, laptop computers, or can be used to purchase other products from partner companies such as Kenya Airways. Bonga points can be topped up with cash payments in case the points are not enough for the purchase of a required item.

d) Safaricom online shop provides a wide variety of gadgets for purchase either through reward points or cash. Their website also provides information on promotions of some items and free bundles.

e) 191 directory provides phone numbers and addresses.

f) Blackberry services include internet packages, BBM, email, social networking and BlackBerry App world.

g) 411 information services including entertainment SMS, quotes, horoscopes, news, buying and selling prices of commodities and others.

h) 911 SOS security is an emergency response system run by Safaricom's partner Cartrack.

i) Daily nation e-paper provides a free one-month subscription to the daily e-newspaper.

j) Skiza is a music entertainment service that provides caller tunes.

k) MyTunes allows customers to download their favorite music and comedy.

l) Kleek enables customers to listen to their choice of songs and tracks using their cell phones.

m) DSTv Mobile allows streaming of mobile TV and video services and offers 16 channels on subscription basis.

n) iCow enables dairy farmers to keep tabs on their cows and enjoys tips on best practices.

o) Number portability information is available in the online help, but with a relatively low amount of details.

p) Linda Jamii is a medical cover insurance scheme created with insurance partners to provide medical and funeral expense covers.

q) My1936 Card enables customers fast and cashless way of doing transactions; the card can even be used to pay for local transportation.

r) Virtual meeting facilities that provide video and audio conferencing.

s) Okoa Jahazi enables customers to access airtime and internet on credit and pay later.

t) Safaricom also offers special services to businesses and provides corporate solutions, however due to the scope of this research that section was not thoroughly investigated.

Safaricom seems to have deviated from the multiple tariff system commonly used in Kenya to a single tariff plan called *Uwezo* tariff. This tariff applies to all pre-paid customers. Previously there were *Jambo*, *super tariffic*, and *Super Ongea* tariffs but all were phased out. A platinum tariff does exist for certain members though, and provides

them with exclusive platinum rights. Appendix F provides a summary of all the Tariffs and their price comparison.

Packaging offers a cheaper way of purchasing a certain service, usually on promotion for a specified period of time. Some packages include SMS bundles, data bundles, international calling bundles, roaming bundles, or a combination of some or all. These combinations of bundles are commonly known as *combo bundles*. During the time of data collection, Safaricom was offering a variety of data and Internet bundles, an East Africa roaming bundle, SMS bundles, and a receiving call roaming bundle. Safaricom is a Vodacom partner and thus provides cheaper rates when roaming outside Kenya on partner networks. Special discounted rates apply to six African countries.

Promotions are special offers that run for a short period, with the aim of attracting a particular target of customers. Safaricom has clearly indicated on its website the period of its promotions and the eligibility of the customers. At the time of data collection, the following promotions were running,

a) Bonyeza Ushinde is an SMS promotion where customers send text messages to answer some questions and enter a draw on prizes.

b) Kwachua Kredo Promo is a promotion that promotes the use of the self-service web portal and provides customers who log on to the personal service with free airtime if they guess a few digits correctly.

c) Ultimate upgrade promotion is a draw to win a BMW car for customers who purchase a Samsung device from Safaricom Shop.

d) Wikipedia zero, where subscribers surf through Wikipedia for free without any data charges.

e) Night shift tariff for data, offers 50% bonus data for nighttime users.

Safaricom customers have the flexibility to top up their airtime when it runs out with a variety of options including (a) scratch cards, (b) *M-Pesa*, (c) ATMs from selected banks, (d) indirect top up from any other Safaricom phone using a scratch card, (e) *Okoa jahazi* which lends customers credit to be paid later, (f) or even using *Sambaza* which is an airtime sharing services that enables customers to share the airtime with other customers. Safaricom also offers *Jiokolee* airtime that enables customers who have run out of airtime to complete their calls and pay later.

Mobile money is one of the leading services of Safaricom and has spread throughout the whole East African region. Mobile money has recently transformed the life of many people and has provided cashless transaction services in remote areas where banks were unable to reach. Bank expansions were limited either due to remoteness or due to the small population available making it unfeasible for banks to open branches. According to CA (2013), mobile money has surpassed the banking systems and has grown beyond the use of debit cards due to its widespread and variety of services. Safaricom offers a wide variety of services using its popular *M-Pesa* services including:

a) Mobile money transfer from one M-Pesa customer to another.

b) Buying Safaricom airtime.

c) *M-Shwari* is a banking product where M-Pesa customers can borrow money, or save money and earn interest. M-Shwari saving accounts enables customers to link their accounts to their M-Pesa and transfer money at no charge.

d) *Lipa na M-Pesa* allows customers to shop online.

e) *Lipa Kodi* allows M-Pesa customers to pay their rent to registered housing agents.

f) *Changa na M-Pesa* allows customers to pay all their utility bills using their phone.

g) *Lipa Karo na M-pesa* allows customers to pay for school fees.

h) Mobile banking links customer's M-Pesa account to their bank accounts. This service is currently operating with 37 partner banks where customers can withdraw from, and to, their bank account using M-Pesa and can withdraw from ATMs of selected banks using the M-Pesa account.

i) Bulk payments such as salary transfers are also possible with M-Pesa

j) International money transfers at no cost to the US, UK, Europe and UAE

k) Prepay safari card is an international debit VISA card that is reloaded with money via M-Pesa account even while roaming.

Advertisements, distribution agents, and social media are direct ways for the carriers to interact with their customers. The section below was dedicated to gather information from each carrier on how they approach their customers. The analysis section provided further analysis on the topic of marketing. Safaricom uses all kinds of advertisements including massive road banners, Television and radio commercials, newspaper adverts, road drives, social events, and corporate social responsibility initiatives. Safaricom has an active Facebook page with 960,593 likes with very interactive administrators that post at least eight posts on weekdays and three posts on weekends. The interactions with customers on social websites mainly include inquiries

about services, with a smaller portion of the comments from customers complaining about some problems in their services and because of high prices.

Airtel. The website of Airtel Kenya (Airtel) is hosted on the www.africa.airtel.com website. The website seems to be well developed and is very user-friendly with drop down menus and hyperlinks at the bottom of the pages linking to almost all services. The customer care email on the website did not return any reply at all; however, when using Facebook the administrator provided assistance immediately. The website does provide detailed FAQ on every topic separately making it easy to find answers to most questions. The website provides detailed description of all the services and products provided by the carrier, a brief summary of each service or product in indicated hereunder.

a) Web 2 SMS, allows customers to send five free on-net text messages from the website.

b) Airtel Zawadi is Airtel's loyalty program. Customers can exchange their Zawadi points into cash discount vouchers that are used at airtel shops to discount the items purchased. This provides the flexibility of using both points and money.

c) Airtel devices are all advertised on their website, and many additional offers come with bundled phones.

d) 911 rapid response service in conjunction with KK security and EARS is available.

e) Airtel Live is an entertainment service that provides information, quotes, jokes, news headlines, exchange rates, games, Bible, and Quran verses.

f) Airtel Classifieds is a service that customers can use to search for jobs, vehicles, property, health tips, and much more.

g) Airtel football is a football alert service that keeps fans always in touch with football news.

h) Islamic Portal offers different religious services such as prayer timing alerts, Islamic songs and sayings, verses and recital of the Quran.

i) Choose your number is an option from airtel where customers can choose their preferred prefix.

j) Airtel Direct Debit transfer is a standing order instruction that allows Airtel to debit your bank account or credit card and pay the monthly bills.

k) Friendz Live chat is an anonymous voice chat that allows Airtel customers to connect with new friends.

l) Games club allows customers to play for a whole day at only ksh10 per day.

m) mLocator is a unique service by Airtel that tracks employees, family members, or any other airtel customer through their phone, activating this service requires prior consent of both parties.

n) Mobile number portability information is available on the Airtel website

o) Airtel Ngoma is a nonstop music playing station similar to FM radio; customers can also download and send music dedications using this service.

p) Airtel Hello Tunes are ring-back tones to replace the conventional ringtone. Customers can customize ringtones using several available options such as Name tunes where the customer's use their own name as the ring-back tone.

q) Phone-orokay is a karaoke application that allows customers to have karaoke on their phone and share their song renditions with other customers on Facebook.

r) Bima Mkononi is a life insurance service provided by insurance partners.

s) Airtel offers two debit card options. The first is a temporary card that customers can use for online transactions and is created instantaneously by transferring money from Airtel money. The second option is the Airtel Money Visa card that can substitute a standard debit ATM card and can withdraw money directly from airtel money account.

t) Kopa Credo and Kopa Internet enable customers to access airtime and internet on credit and pay later.

u) Airtel also offers special services to businesses and provides corporate solutions such as bulk SMS and others.

Airtel provides the flexibility of different tariffs. The tariffs present at the time of data collection were *Klub254* which provides a discounted rate for on-net calls, *Freelanga Free tariff* which provides a discounted on-net morning hour calls, and the *Vuka tariff* which provides a discounted on-net evening hour calls. These three tariffs were effective 1st of September 2013 without indication of an ending date; however, it has been a custom of all carriers to introduce tariffs without indicating closing dates unlike with bundles and promotions. The analysis section provides detailed analysis of the tariffs and how they could be used to attract customers.

Bundled packages are abundant on airtel website. Airtel offers *Kimataifa* international calling bundles providing free minutes to five countries. A similar package named *Tosha bundle* includes international calls, on-net calls, off-net calls, SMS, and

data. This bundle comes with an option of monthly, weekly, or even daily subscription. Another combo offered is *Club night* that combines data and voice bundled together. Airtel offers a variety of data bundles known as the *Blaze* bundles that start from 5MB up to 20GB with an additional option of unlimited internet at ksh3,499 per month equivalent to approximately $40. SMS bundles are also available such as *Club 10* and *Club 20*.

Airtel is present in 17 countries on which it applies the *One Network Tariff*. This allows Airtel customers to talk at discounted rates and receive free calls when roaming on its network in other countries. Other roaming rates are available on their website through a drop down menu that provides the customer with full roaming details. The information available includes preferred partners to roam on and a detailed price list of all the services.

Airtel provides many promotional offers for their customers. However, the terms and conditions are not very clear especially the starting and ending dates of the offers. At the time of data collections the following promotions were running,

a) *Free-Kipedia*, a three-month free service that provides Airtel customers with free access to Wikipedia.

b) *Internet.org* is a new Facebook-led initiative with the goal of making affordable internet access available to two-thirds of the world. This service provides fFree basic services, enabling customers to browse selected sites for free.

c) *Chemsha Bongo Na Airtel* is a quiz that tests general knowledge. Participants get 100 points for each question they answer, and the

participant with the highest points by the end of the promotion period wins a prize of Ksh 1 million.

d) Free Twitter is offered for a period of three months until 5th January 2014! (expired offer)

e) *Airtel Trace Music Star* is a song competition promotion where participants upload their songs and people vote for them. The winner gets to win a car.

f) *Shikisha Stori Na 5X* is a prepaid promotion which gives a 500% bonus reward to clients who achieve a daily usage target ; the bonus expires at midnight of the same day.

g) *My Airtel My Offer* is a unique Airtel offer where customers dial a number and get special bonuses.

h) Smartphone free data bundles, offers customers who buy a 3G Smartphone from any of the Airtel shops or partners a free data bundle.

Airtel customers can recharge their phones by using (a) scratch cards, (b) Airtel money, (c) ATMs from selected banks, (d) global top up using credit cards from 16 different countries, (e) *Kopa Credo* and *Kopa internet* which are credit services that allow customers to borrow airtime and internet and pay later, or (f) *Me2U* which is an airtime sharing service that enables customers to share the airtime with other customers.

Airtel money is a popular mobile money service used in Kenya. Airtel currently has over 700 agents in central and cost region, but with no further information on other regions. Like M-Pesa, Airtel money is a secure and convenient mobile commerce service that allows customers to access services such as;

a) Mobile money transfer from one Airtel money customer to another free of charge.

b) Buying Airtel airtime.

c) Paying for parking.

d) Paying power bills with no commission charged.

e) Paying for fuel at Total petrol stations.

f) Booking tickets with Jambojet via Airtel Money.

g) Paying vehicle taxes to Kenya Revenue Authority.

h) Paying postpaid bills and customers get 10% discount.

i) Mobile banking links the airtel money account to their client's bank accounts. Currently in partnership with four banks only.

j) Bulk payments

k) Transfer money to Airtel Money VISA card or to generate a temporary Debit Master Card number for single online transactions.

Airtel also uses a diverse amount of advertisement. It is easy to see many small consecutive signposts and larger road banners everywhere in Nairobi roads. Airtel also uses TV, radio, and newspaper commercials. Like other carriers, Airtel also prides itself of corporate social responsibility and posts up to date news on their social events and corporate social responsibility. Airtel Kenya has an active Facebook page with 446,175 likes. An active person is handling the administration of the Facebook page and seems to be interacting well with posts on a professional and personal level. The page posts an average of six posts on weekdays and four during weekends. Posts provide varying information on promotions, usage advice, and random social posts providing closer

interaction with clients on the social media. Kiswahili language is used more often when responding to customer's posts.

Orange. The website of Orange Kenya is a mixture of three different websites (a) Orange.co.ke copyright of Orange Kenya in 2013 with some pages in 2012, (b) Orange-tkl.co.ke copyright of Telekom Kenya 2011, and (c) money.orange.co.ke copyright of Telekom Kenya 2011. The customer care email on the website returned an automated message, but no response to the email was received. The Facebook administrator responded to the query sent within four minutes. The main website is straightforward with bottom links directing the customers to most services and products, but many links direct to other websites and many other links are broken. The websites are also outdated with conflicting information regarding the offers some of which have expired since 2011.

The mixture of information and jumping from one website to another is very confusing and distracting, making it relatively hard to allocate a specific piece of information on the Orange website. The website provides a self-care feature like that of Safaricom but with much fewer features. The website does provide details of the services and products but needs a computer savvy person to be able to surf the interchanging websites without falling into an endless loop of unnecessary surfing. Despite the multiple websites, the conflicting information, and duplication of some information, customers can find detailed description of the following services and products on the websites;

a) Self-care section including links to the following services,
    i. Online recharging using Pesa pal or Orange debit card.
    ii. Orange emails.
    iii. User guide with some firmware for devices sold by Orange shop.

iv. A customer survey.

v. A full list of Orange shops with Google Maps.

vi. Data usage calculator.

vii. Parental control program to control web access.

b) Ziada Points loyalty program for prepaid customers comes with an automatic enrollment to the service. The points can be used to top up credit and can be used to purchase certain devices from Orange shops. Unlike Safaricom and Airtel, Orange customers cannot mix Ziada points with cash.

c) Angukia reward program is a reward scheme that surprises Orange customers with free gifts including airtime, bundles, ringtones, Ziada points or free music and video downloads.

d) Birthday treat bonus rewards GSM Orange prepaid long term customers with free bundles on their birthdays.

e) Zawadika reward is a long term loyalty program. Customers get bonus awards based on their length of stay with Orange. The more the client remains active with Orange, the higher the bonus awards.

f) myOrange App is a mobile self-care application that offers personalized account management features. The application is compatible only with Android phones. The application seems to have more features than the website and is a more user-friendly platform.

g) Gmail texting allows customers to text from Gmail to Orange customers for free.

h) Orange provides offers for devices and gadgets on their website, and provides special offers bundled with phones.

i) HD Voice is a free service that allows customers to have a conversation with high-quality voice. A special HD voice mobile phone is required to access this service and must be within the Orange 3G network coverage area. The demo website link that is supposed to provide more information is not working.

j) VOIP special international rates for some selected countries.

k) Orange has the uniqueness of providing fixed land lines through optical fiber and copper cable connections; it also provides wireless lines (CDMA) and ISDN but at much higher rates than that of GSM technology. Orange targets landline services mainly to offices and residential houses.

l) Entertainment services require a four-digit short code to connect customers directly with entertainment providers and certain organizations that provide such services. Content providers can easily register for a short code.

m) NiSort is a reverse call service that enables customers to call someone and charges the receiver for the call.

n) Mobile number portability information is available on the Orange website.

o) Orange Hello tunes with customized messages are available.

p) Orange Bima is a device and life insurance cover that covers the devices bought from Orange shops. Life insurance can be bundled with device insurance or sold separately.

q) Orange Uni-Zone is a pay as you go offer that targets university students enabling them to make calls at a special tariff within the university campus. Orange recently launched a trial at Kenyatta University in 2015.

r) Orange Money chip-and-PIN Visa debit card can withdraw cash from any ATM and payments at Equity Bank ATMs. Customer can also use it for online transactions and for "cash back" at leading supermarkets in Kenya.

s) Orange also offer bulk SMS services.

t) Orange also provides teleconferencing facilities for hire.

Orange offers several tariffs for their customers. The tariffs present at the time of data collections were *Tujuane Tariff* offering a flat two shillings rate for on-net and three shillings for off-net calls with Facebook and Wikipedia at zero rating. The *Holla* Tariff offers free calls and text messages to Orange mobile, with free 10 Mb of date for Ksh 10 per day; Tujuane prices apply for off-net. *Usinyamaze Tariff* provides free calls from 10am to 5pm for all on-net calls for Ksh 100 per month, standard rates apply for other times and off-net calls. When using the UMTS mobile phones (WCDMA technology) the standard tariff is ksh 2 for on-net and ksh 4 for off-net. *Bunda100* tariff gives UMTS mobile users an offer identical to the GSM Usinyamaze Tariff.

Orange is very famous for its landline bundles because it had inherited the landline and WCDMA networks from Telekom Kenya; it is therefore able to offer bundles that no other carrier in Kenya can offer. Orange offers several unlimited internet bundles for as less as ksh 3,000 (approximately $30) that include free voice minutes and unlimited broadband internet. Double Play Combo bundles offer a wide variety and mixture of landline minutes, mobile minutes, mobile broadband, and fixed broadband at

very affordable rates. SMS bundles offer 1,500 SMSs for as little as Ksh 75. Orange Mobile Internet also provides several limited and unlimited bundles at a much cheaper rate compared to other carriers.

International calling bundles provide free international limits and a discounted rate to USA, UK, Canada, China, and India at Ksh2 per minute; this bundle comes with free data bonus. Orange operates in 16 countries on which it offers special roaming rates at significantly lower prices if the customer roams on their network. Other roaming rates are accessible from the website through a drop-down menu that provides the customer with details on the prices.

Many Orange offers on their website were outdated; others do not have information on when they are active or whether they have expired. Some of the promotions provided on the website are;

a) Facebook Zero.

b) Download more provides an unlimited download option for seven days (broken link to the promotion page).

c) Jienjoy na mbao offers free calls and SMS and data bundle (broken link).

d) Keep chatting, data bundle with free Facebook, Twitter and other sites (broken link).

e) Reach the world. Make international rates at discounted prices (broken link and the prices are conflicting with those provided in the international calling link).

f) Jaza ijazwe offer (expires June 2011).

g) Reward programs appear as offers on the website, but there is no indication of the time frames.

Orange customers can recharge their phones using (a) scratch cards, (b) Orange money, (c) ATMs from Equity banks, and (d) international airtime transfer. Although the orange money website states that credit facilities are available upon application, there is no further information regarding that service anywhere.

Orange money is also available. However, the orange money website is outdated and still advertises promotions dated 2011, and hosts old news dated 2013, also the E-billing links are not functional. The website provides portals for employees and agents and sales partners to log on to, but with no access the actual functioning of these portals was not possible. Orange money website reports having 36 Orange shops, 400 partner shops and approximately 6250 agents countrywide. List of the agents with their details is available on the website. Orange Mobile provides a number of services including;

a) Recharging Orange airtime.

b) Transfer money directly from bank accounts (bank association not stated).

c) Pay bills.

d) Access money from ATMs of Equity Bank, the largest bank in Kenya.

e) Orange money debit card.

f) Access to credit facilities and financial services.

g) Orange Money can be used to make online payments.

h) Using mobile money earns Orange customers loyalty points.

Orange, like other carriers extensively markets their products with many modes of advertisements. Noticeably, there are no links from the website to access any social

media; however, when searching on Facebook, an Orange Kenya page appeared to be dormant with the last posting in January 2014. On the other hand, their official Facebook page "Orange Telecommunication" has over seven million likes! (more than double their customer base) The page is active with up to eight posts per day featuring promotions, events, and different services. The customer posts are general, but most comments indicate happy Orange customers; some ask about services and offers, and almost a negligible amount raising complaints on the Facebook page.

YuMobile. The website of YuMobile is a simple website that is mostly up to date with a clear message on the home page stating, "We may be changing, but you will always be connected. We promise to keep you and your family connected wherever you are. Your yuMobile lines will now and in the future remain fully operational, and you will continue to enjoy all our offers and packs" (Yumobile, 2014). The message is clearly communicating the change that is taking place, however, does not indicate what kind of change is going to take place. According to managers in YuMobile the subscriber base was sold to Airtel, whereas Safaricom bought the physical infrastructure. Until that change fully occurs, Essar group is still in full control of the carrier's activities and the website. So far, the change has not been communicated to clients in the media and YuMobile continues to operate as a competitor to other carriers. The website has some broken links and some conflicting information regarding some tariffs. The website is user-friendly and very colorful, and the designs are also lively and joyful. The customer care responded via email in less than an hour and interactions with the Facebook page was also immediate. The website markets a number of promotions and services such as;

a) Entertainment information that allows customers to subscribe to specific contents and get daily messages. Services include, horoscopes, bible quotes, wisdom quotes, news, general knowledge, weight loss tips and others.

b) Dunda Calling Tunes.

c) *YuVoice* chat that enables customers who do not have Smartphones to chat through voice recorded messages anonymously.

d) *YuRadio* adds several options such as creating your own DJ, dedicated songs to loved ones, and listening to your favorite music anytime.

e) *DStv Mobile* allows the viewing of live transmission and television channels on the mobile phone.

f) *YuCredo* allows customers to borrow airtime on credit.

g) Information on number portability.

h) YuCash, although the website provides a link, however, no information is available. Customer care indicated that the product has been suspended and is no longer working.

i) *Eneza* is an electronic top-up service that can recharge airtime online using several options such as PesaPal, Visa or MasterCard, the website also shows the possibility of buying credit using *YuCash*, which was deactivated.

The YuMobile website offers five different tariffs in two different tabs, the information on the *Mos Mos* tariff tab is conflicting with that of the promotion tab and it is not very clear which one applies. *Freedom 10* tariff allows customers to talk on-net

calls for free the whole day at ksh 10. The *Amua* plan is an extension of the freedom 10 tariff and provides free on-net calls and text messages 24 hours and off-net calls at Ksh 3. The plan also includes 10MB of data at a daily charge of 15Ksh. *Jioni Pack* provides free on-net calls from 6pm to 6am for only 6ksh per day. Finally, the *Karibu Tariff* offers discounts on on-net calls to one Ksh however that promotion seems to be outdated because the prices seem to be much higher than the current average prices in the market.

YuMobile bundles text messages and Data bundles at a very affordable rate. Ano offer for unlimited SMS at ksh5 per day and unlimited data at ksh 500 per month is available making YuMobile the cheapest of all carriers in all their products. The limited data bundles come with free 100% bonus. The website does not show any mixed offers or combo bundles.

Essar group operates in 25 countries; however, YuMobile appears to be independent of the other carriers in the group. The website does not specify any special offers on roaming rates to other carriers in the group. The roaming tab also indicates that customers can roam in 158 countries but does not indicate which countries and at what rates.

YuMobile offers are not many as well, there is the *Valentine* offer where two numbers can pair and call absolutely free for ksh 5 per day. The *YuHoliday* promotion is an interactive offer where customers participate in a series of questions about YuMobile products and general knowledge and get points for every question. It was not very clear though how YuMobile chooses the winners. The Facebook page provided information on international call plans for six countries at a rate of ksh 2 per minute.

YuMobile customers can recharge their phones using scratch cards, online using PesaPal, and via credit cards. YuMobile does not provide any mobile banking facilities or association with any banks. YuCash was available, but is no longer available due to the transition that YuMobile is facing. YuMobile does not offer any devices or has any partner shops.

Despite their small size, YuMobile considers marketing as important as any other carrier. The marketing team of YuMobile uses the same variety of marketing campaigns used by other carriers. It is also very common to see full page newspaper ads and multiple consecutive light-pole signposts advertising different YuMobile products. The Facebook page was created in 2009 and currently has 79,490 likes. The page is active with a minimum of three posts per day. The YuMobile team advertises different bundles and promotions. Customers do not have many interactions with the page and most comments are complaining customers who are not satisfied with the service. YuMobile has only four relationship centers across three major cities.

Manager Interviews

After the detailed data collection from website and publications was entered into Nvivo10®, a combined summary was imported and presented in Appendix F. Further information was required to understand better the point of view of the carriers. The manager interviews were necessary to complete the holistic, in-depth perspective of the carriers. The interviews were also necessary to be able to answer the two sub-questions related to the carrier policies and the effect of the economy. Managers attended the interview in the premises of the carriers with their written permission. The questions involved an in-depth one on one interview that lasted between one to 1.5 hours. The

manager interviews were not recorded; however, detailed observations and notes were taken, including reactions to the questions, speed of answering the questions, and confidence of the participant. Concealing the names and gender of the participants was necessary for confidentiality purposes. The interviews related to the participants based on their carrier's name. Thus managers were referred to in the masculine form throughout this dissertation.

Data from the manager interviews were entered into NVivo10® manually. Each question on the interview and each carrier was given a node. Node classifications were used to create an extensive comparison matrix to compare and contrast all manager responses. The answers of the managers together with those of customers were coded into separate category nodes representing all possible causes of churn. The nodes representing the causes of churn were updated throughout the whole research starting from the literature research, the website and publication data collection, the manager interviews, and ending with the field data gathered from customer interviews. Therefore, any and possibly all causes of churn would be reflected in one of the node categories and would be definitely classified under one of the node groups. Detailed analysis of the data collected is discussed in the analysis section and consolidated with the data gathered from the literature and website to provide an integrated view of the carrier perspective and to answer the relative sub-questions more accurately and in full details.

Pilot Interviews

The primary aim of pilot interviews was to ensure that the subjects understand the interview questions and can answer the relevant questions with ease. The pilot interviews also targeted the reliability and validity of the data collection tool by ensuring that the

data collected is appropriate for the study. Ten participants recruited from two public locations in Nairobi participated in the pilot interviews on two different days.

The demographics of the participants chosen for pilot interviews included both genders from different age groups ranging from 19 to 47 years. Occupations were also diverse including; housewives, students, casual laborers, unemployed people, a widow, a driver, an accountant, a secretary, and business owners. The educational degree among the participants ranged from primary school drop outs to undergraduate levels. The choice for ordinary people with lower education was necessary to ensure that the interviews were simple and did not contain complicated terms. The analysis did not include any of the data gathered from pilot interviews.

The pilot interviews demonstrated some challenges to participants especially in understanding some questions due to culture and wording of phrases and terms. Few minor changes were required to solve this misunderstanding by re-wording the following terms in Appendix A;

a) *In a relationship* was added to Married in question four

b) Employment status changed to *occupation*

c) Calling plans to *tariff*

d) Urban/rural resident to living in the *city or village*

e) What is your age changed to *how old are you?*

The data collection tool required a few more demographic questions to gather information on gender and age. In addition, two sub-questions were added to question nine to investigate the bundles, tariffs, and promotions that appeared to be confusing the participants when asked in one question. Dividing these questions aided participants in

discussing the sub-subjects in greater length and explain their experiences with each type of product and service.

It was obvious at early stages of this research that people having one SIM card would not have much experience with churn. However, it was noted from pilot interviews that not all people with one SIM card have not experienced churn. It appears that some of the customers who are using a single SIM card are actually extreme churners. These customers have completely changed their old carriers by replacing the old carrier with a new carrier rather than the standard practice of purchasing an additional SIM while keeping the old one. The screening question was thus revised to include a sub-question asking the participant if they ever used a different carrier before their existing carrier. If the sub-question was negative, only then would the participant be excluded from the interview.

Customer Interviews

The initial sample was designed to range between 20-50 participants. Interviews involved only 29 participants recruited in the city of Nairobi on three consecutive days. Participants were chosen from four different locations, all of which were public and did not require any approvals or permits to use. Despite the high surrounding noise levels, the recordings were of good quality and were quite clear. The duration of the interviews ranged from 18 to 40 minutes; however, there is no significant relationship between the length of the interview and any of the demographics. Despite that the interview questions were meant to guide the interview, the interview was not structured in any way, and the answers from the participants had a great role in guiding the interview.

The questions were relatively open, and the discussion allowed the diversion of the questions into side discussions and questions that were related to churn but not indicated in the interview. Some questions during the interview required further explanation. Some of the participants' answers were unclear to the researcher or were conflicting with other statements of the participant and thus clarification was necessary. Some of the participants' answers were direct and straightforward, and others were a narration of experiences that the participants had gone through and were very informative in expanding the in-depth understanding of the problem.

Screening questions. Three participants namely CI015, CI025, and CI026 did not continue the interview due to using only one SIM card without any previous history with any other carrier. Three other participants CI007, CI010, and CI013 used only one SIM card. However, these three had experienced churn as they all used to have other lines either with their current carrier or churned from their previous carrier to their existing carrier. This represented a clear indication of a churning experience that was of valuable addition to this dissertation. Furthermore, CI016 and CI024 did not use their secondary lines and left them mainly for receiving calls. This indicated that 30% of the participants were actively using one carrier. Whereas 58.1% used dual lines, 11.5% used three lines, and 0.4% used all four carriers simultaneously. This sums to a total of 70% using multiple SIM cards which is almost triple what was communicated in literature (Sutherland, 2009).

Demographics. Participant's age ranged from 23 to 68 years, 11 of which ranged from 20-29 years, nine from 31-39, four from 40-49, one in his 50's, and one in his 60's. All participants recruited were from Nairobi (one stayed mostly in Eldoret, 12 from

Dagoreti, four from Eastlands, two from Ngong, the rest from different locations all within the capital city of Nairobi). The marital status was also as diverse; the sample included 15 married, five in a relationship, two widows, two single, and two single mothers. The participant's gender was relatively equal with 15 males and 11 females.

Income assisted in categorizing participants into four groups; those earning between Nil to Ksh 6,000 (approximately $70 per month) were nine in number; six earned from Ksh 6,001 to Ksh 40,000; six earned from Ksh 4,001to Ksh100,000; and five earned above Ksh 100,000 which are usually considered from the upper middle class. The education level was also as diverse with five participants at high school level, eight with diplomas, one was a student working towards a bachelor's degree, nine were undergraduates with bachelor's degrees, two were undergoing master's studies, and one was a post graduate with a master's degree. The occupational fields of the participants included four in the field of human resources, four office and project managers, three teachers and one librarian, two bankers, two business owners, one unemployed, a cashier, a housewife, a hotelier, a marketer, a pharmaceutical representative, a priest, a carpenter, and one stores supervisor. Appendix G provides a full tabulated summary of the demographics.

Sampling and data saturation. All the participants chosen were nonrandom and conveniently selected either due to the convenience of their location or because they were of specific demographics that were necessary to fulfill the diverse sample required for this research. As per the demographic summary in Appendix G, the sample was relatively broad and could be a suitable representative of the city of Nairobi population. On the first day, 12 interviews from the first two income groups were conducted, by the 9th interview

the answers were already being repeated, and saturation level was achieved for these two income groups. However, four more interviews from the same levels were just added to ensure satisfactory results. On the following two days, the recruited participants were intently chosen from higher income groups to ensure that information gathered from all demographics were adequate and sufficient. During the design stage the sample of 20-50 participants was thought to be suitable for this type of research. This proved to be true, as by the 24th interview the data had reached saturation level. The interviews done thereafter were to a great extent redundant.

Analysis and Results

In the analysis section, the coded data was filtered, sorted, grouped, compared, mixed, and matched. The analysis involved two different methods, the first analysis was a comparison between the carrier's perspective and that of the customers. The gathered data was distributed on different nodes combining what each perspective thought as the main causes of churn. This first analysis was a clear attempt to differentiate the actual causes rather than the perceived ones. The second method of analysis was based on the three sub-questions. Each sub-question attempted to answer the problem from all possible data sources and captured the different viewpoints regardless of their respective positioning. The analysis was done in two different phases with sufficient time apart to avoid self-bias. The following section starts with the different perspectives, followed by answering each of the sub-questions through a detailed analysis of the data sources.

Analysis from Two Different Perspectives

To learn more about the causes of churn and how to best retain customers the research investigated the different points of view of both the carriers and their customers.

The interviews were only one part of such investigation; the research used further details provided from literature reviews, websites, and official carriers' social media. The results hereunder reveal the different perspectives on the causes of churn.

Carrier Perspective

The data gathered from the websites, publications, and other sources of media could not be analyzed in isolation. The summary of data presented in Appendix F was a mere representation of all the findings from secondary, non-human sources; and thus was only considered a preliminary step in the analysis stage. The Manager interviews composed an essential and necessary step for the in-depth understanding of carrier policies and their effect on churn. Although carrier's websites generally communicated different products and services, some interpretations such as the target group, the value for money, and the importance of technology advancement could be deduced. The reaction towards churning customers also could not be interpreted and thus the need for further data from manager interviews.

Perceived Causes of Churn. After coding the Manager interviews, a total of 22 categories were recognized and coded into nodes. Sub-categories ranged from one to as many as 15 items per category. References to *products* came as the top most topic followed by price and customer care. The least topics spoken about (with eight references or less) were, demographics, stability, community contribution, carrier's lifetime, number portability, customer knowledge, distribution agents, customer base, flexibility of choice, technology, and regulations and policies. The highest references went to the node described in Table 6.

Table 6

Nodes representing top 11 possible causes of churn from manager's perspective

Rank	*Description*	*References*	*Percentage*
1	Products	30	11.63%
2	Price	24	9.30%
3	Customer care	24	9.30%
4	Marketing	16	6.20%
5	Customer segmentation	14	5.43%
6	Brand name and loyalty	14	5.43%
7	Promotions	13	5.04%
8	Network quality	13	5.04%
9	Network coverage and distribution channels	11	4.26%
10	Competitors	11	4.26%
11	Call plans and tariffs	11	4.26%

The top 11 causes of churn mentioned above were referenced by all the four carriers and provide an interesting remark on the carrier's perspectives. The fact that none of the top causes has anything to do with the customer's behaviors, demographics, or patterns, implies that carriers may feel that they are responsible for the causes of churn. It could also mean that the carriers probably think they hold the solution to churn, and that the customers have little to do with the problem. Despite that analysis, the Airtel manager stated, "The customers don't want to take steps to solve the problem to reduce their bills. Customizing products for each individual is not very easy because the customer base is

quite big. And customers don't find face value if we approach them to tell them how to reduce their consumption."

Table 7

Word frequency from manager interviews, extract from Nvivo10®

Rank	*Word*	*Count*	*Weighted Percentage (%)*
1	customer(s)	82	6.53
2	Services	21	1.67
3	Use	20	1.59
4	Network	18	1.43
5	Products	15	1.19
6	Coverage	14	1.11
7	Value	14	1.11
8	Market	13	1.04
9	Churn	12	0.96
10	Competitors	12	0.96
11	Price	10	0.80
12	Promotions	10	0.80

The problem of churn in the perspective of incumbent operators is not a worrying problem as noted by the Safaricom manager representing the most established carrier in Kenya. This opinion is similar to that of Ranaweera (2007) and Datta et al. (2000). The Safaricom manager showed confidence in all his responses and stated, "The effect of churn is insignificant because the initiatives by competitors are only affecting the 87% of

our lower value customers." The newer entrants see the causes as mainly due to the intense competition from more established carriers and their mobile money services. YuMobile manager did admit that network coverage and distribution channels are a limiting factor in expanding their customer base. Nevertheless, despite that most of the causes discussed were carrier related, the Orange manager stated that the possible causes of churn were, "(a) lack of loyalty, (b) people are not sure of what they want, and (c) we have not paid enough attention to our new clients". This indicates shared responsibility for the causes of churn , but more dependent upon the customer.

Nvivo10® has several options to analyze qualitative data. One way is to allocate answers to particular nodes in which they appear as references. This method usually provides more accurate analysis as the allocation of responses to particular nodes is relatively objective. Another form of analysis is calculating the frequency of the most common used words. When Nvivo10 was used to calculate the word frequency from the interviews done with managers, the word *customer* and *customers* came in with the highest count of 6.53% (Table 7). This could be easily associated with the nature of the interview where the problem of churn was directly related to the customers. However, when looking at other words that followed, the words service, network, product and coverage all came before price and promotions. There is a clear indication that the carriers do understand that network quality, coverage, and the services they provide to their customers are of equal value if not more than price. Withiam (1999) reported a similar view point that customers value convenience over price. Despite the understanding of how much the carrier's customers value the services, price wars and competition ended with operators greatly suffering the consequences and feeling the

pressure caused by such low prices. As Curwen, 2005 had stated such price wars end up hurting both the customers and the carriers. The carriers ended up increasing their prices very soon after a slaughtering price war in 2012-2013.

Defining Value. The main difference between the four carriers is the way they define valuable customers. Safaricom manager stated, "We define value by the money spent, but we are going more into spent per service rather than general spent." Contrary to that opinion of the Orange manager who stated, "Defining how valuable a customer by the amount they spend is wrong, we consider valuable customers by how long they have been with us." The data collected from Orange's website confirmed the comment of their manager as the website provided multiple loyalty programs targeting long term customers. YuMobile manager defined valuable customers as, "The customers that use us 100% of the time as their primary preference". Finally, Airtel's manager stated, "Anyone who uses my network is a valuable customer, but people who use us as their primary SIM card are of more value."

Despite the way carriers define valuable customers, it seems that their definition of value is not very far from each other. The two newer carriers defined themselves as more affordable, whereas the top two carriers defined themselves as the providers of a wider variety of products, wider network coverage, and higher stability. The Safaricom manager stated simply, "Success brings more success."

Apparently three out of the four carriers target the mass market and only one concentrate on a particular niche. Nevertheless, Orange manager stated, "We target the whole population but put emphasis on the business market and corporate world." Safaricom manager stated, "We cannot ignore the wider market, but 13% of our

customers bring us 80% of the revenue." Similarly, with Airtel manager who stated, "We target the wider market. Yes, the niche market is there and we do target some of them like the enterprise and the corporate customers but we also target the youth". According to Qian et al. (2006) profiling customers is an essential step to properly segment customers, and prevent churn. Despite the importance of profiling, the managers' comments showed that the segmentation of customers is relatively weak and is based either on revenue or generation/age. Thus profiling telecommunication customers in Kenya is inadequate and requires much improvement.

Customer Complaints. When asking the managers about their most frequent customer complaints, their answers were not much different. Safaricom manager stated, "We can say 80% of our customers are happy the rest have issues mainly technical because of products and services going down" (meaning they have become temporarily unavailable). Safaricom appears to have taken serious steps towards fixing the problems by making a solid and user-friendly website. Safaricom yet remains the most congested network causing endless customer complaints especially regarding their long queues on all customer service portals.

Airtel manager stated, "11% complaints come from value-added services (VAS) and nine percent complain from new products or promotions." Similarly, the social media showed that most customers interacting on the Facebook page were asking for information regarding the products. A possible cause for such lack of information is because of Airtel's introduction of a very wide range of services at the same time.

The Orange manager thinks that their rate of complaints is as low as 11% mostly the new customers. He also stated, "New customers complain that their money got

exhausted because of unwanted services." The social media of Orange had the highest number of likes and the least amount of complaining customers confirming their low rate of complaining customers. Nevertheless, this has not prevented the bitter drop in customer base in the last two years.

The final carrier, YuMobile reported that 40% of their customers complain mainly due to coverage and connectivity. Again, their Facebook page confirmed such a high rate of complaining customers. Literature research showed that customers reported similar complaints since the introduction of the telecommunication industry. Keaveney (1995) reported that the top two factors for churn were core service failures and service encounter failures followed by pricing then inconvenience.

Proposed Solutions. When managers responded to questions five and six, what are the steps taken to solve the problem? And, what they had done to prevent the problem of churn? The YuMobile manager who reported having problems with connectivity and coverage stated that he needed to create better coverage and create a wider distribution channel for his products. The carriers that had fewer network problems responded quite differently. Airtel manager mentioned increasing distribution, improving network quality, customizing products and reviewing customer complaints. The same carrier just negotiated a deal to increase its customer base rather than its infrastructure. The Orange manager mentioned paying attention to existing customers, implementing loyalty programs, upgrading customer service, monitoring customer behaviors, and improving network coverage. Apparently this carrier is the one with the most loyalty programs and reportedly the best customer service as per social media analysis. Finally, Safaricom, the most developed carrier mentioned that customer surveys, increasing the product range,

and offering more value to high-value clients were the proposed solutions to the problem of churn. None of the managers mentioned reducing the price, or providing cheaper offers, or better promotions as a proposed solution; nevertheless, the price wars seem to be endless with the prices reduced dramatically in the last five years.

When asked to rank the special offers to customers in question 15 (Appendix B) all carriers chose improving the quality of network and coverage as their first option. Other categories were as follows:

a) Improve quality of network and coverage (first choice for all four carriers)

b) Increase brand awareness through advertisement or other marketing methods (Second choice for two carriers, third choice for one carrier)

c) Improving technology and adding newer services (second choice for one carrier and third choice for two carriers)

d) Enhancing customer support center (second choice for 1carrier, 4th choice for three carriers).

e) Reducing the price and making special calling plans (last choice for three carriers, the newest carrier refused to choose this as an option)

Analysis of question 15 shows similar results to those of questions five and six, with consistent results that carriers think that price reduction is not the solution to preventing churn. Despite that products, price, and customer care received the highest number of references, the final analysis shows that what the carriers are trying to say is that price reduction is not the solution but rather concentrating on, (a) network quality and coverage, (b) products and services, (c) marketing and brand loyalty, and finally (d) customer care in that same order mentioned. The different carrier views seem relatively

similar and strongly reflects in their regulations and attitude towards solving the problem of churn as indicated in the third sub-question. But before answering the sub-questions it is important to view the problem of churn from an entirely different perspective. Viewing the problem from the customer's perspective is important to understand how different the views of the customers are from those of carriers'.

Customer Perspective

The carrier's perspective was clear; they wanted to present their customers with the best value for money through network advancement and continuous innovative products. And although the customers agreed with the carriers on the importance of network quality and availability, the carrier's seemed to have overlooked other important aspects from the customer's point of views. Table 8 provides a summary of the most important causes defined by the customers causing them to churn.

Price. All customers referenced price, network coverage, and quality as important factors to them; in fact, price was referenced about 30% more than network coverage and quality. According to literature research, price remains a critical factor that has facilitated the penetration and expansion of the telecommunication networks (Mugabe, 2010). Curwen (2005) also acknowledged that the African telecommunication industry is a price sensitive market. Results of this dissertation showed that participants who felt price was irrelevant were 20 customers and stated it 38 times compared to 122 times for price relevance. Quotes from responses to question 18, “is price a major concern” showed a relatively solid stance. For example CI01 stated, “Yes price is important”; CI03, “Of course price is a major concern”; CI08, “Definitely”; CI11, “Yes, I’ll call more, I’ll subscribe to more services”; CI12, “Yes price is a major concern”; and the list goes on.

Table 8

Nodes representing possible causes of churn from customer's perspective

Name	*Sources*	*References*	*Percentage*
Price	26	122	14.49%
Network coverage and quality	26	89	10.57%
Mobile money	25	71	8.43%
Comfort zone	23	56	6.65%
Group think	19	50	5.94%
Customer's ignorance	23	50	5.94%
Customer support	25	44	5.23%
Services	20	39	4.63%
Price irrelevance	20	38	4.51%
Marketing	19	31	3.68%
Incumbency and stability of carrier	16	31	3.68%
Distribution channels (agents)	15	29	3.44%
Phone number	19	29	3.44%
Business vs. personal	15	28	3.33%
Loyalty	15	27	3.21%
Customer's knowledge	14	25	2.97%
Income	14	17	2.02%
Irrelevant marketing	14	16	1.90%
Type of phone	10	15	1.78%
M-Shwari (savings service)	9	11	1.31%
Reliability	5	10	1.19%
Credit	5	7	0.83%
Cost of receiving calls	4	4	0.48%
Corporate social responsibility	3	3	0.36%

Although some were too sensitive to the price, others showed a wiser perspective of how to overcome the problem. When asking CI08 why she carried more than one SIM

card, she merely stated, "One SIM card doesn't have the offers that the other has." When looking at the customer usage classification sheet in Appendix H it showed that 17 customers out of the 26 participants use Safaricom as their main line; whereas the more price sensitive customers who represent 35% of the sample used other carriers as their primary line. If we take into consideration the three canceled interviews that exclusively used Safaricom, it can still be noticed that 70% of those who use Safaricom as their primary line also hold other secondary carriers. The reason for that was explained by Safaricom customers as follows;

a) CI09, "Airtel is cheaper, and Safaricom is more expensive."
b) CI10, "Safaricom has fair prices, but they don't have any promotions."
c) CI14, "When one is busy I use the other line, also Airtel is a little bit cheaper."
d) CI20," Airtel to Safaricom is cheaper; basically Airtel is cheaper, but I've not made it my preferred line because most of my family and friends know my Safaricom line."
e) CI21, "Safaricom is very expensive, but most of my friends are on Safaricom, Airtel is much cheaper and their services are also cheaper."
f) CI23, I use Safaricom, but I use Airtel when I'm calling Airtel."
g) CI29, "If I'm going to call a long call I use Airtel but if it is short calls I would use Safaricom".

Despite all the above comments, some customers feel that value is more important to them than price. For example, CI04 stated, "Majorly it is not about the price, it is basically about the network." CI07 also commented, "It's not just about the price, I would

want their agents to be everywhere." This serves as an introduction to the next topic of discussion, what are the other factors that concern customers?

Network coverage and quality. Network coverage and quality seemed to supersede many other factors with as many as 89 references. In fact, if network related terms such as network quality, stability, reliability, and distribution networks were combined, the references would be higher than that of price at 159 references. This indicates that the network coverage could be actually the most relevant cause of churn. Harno, et al. (2009) stated that customers would only churn if they found a new carrier with good network quality and service. They also stated that new entrants providing poor network quality while reducing the price will find it very difficult to win any market share which is not entirely true in Kenya as YuMobile was able to acquire three million subscribers in about five years.

Results on network coverage showed that the ratio of complaints from customers who use both Safaricom and Airtel simultaneously was almost 2:1, with double the customers complaining about Safaricom's network especially upcountry. Some of the comments about Safaricom's network included;

a) CI03, "Sometimes outside Nairobi Safaricom is not covered, but Airtel is catching up. Also Safaricom is so congested. "

b) CI22,"On Fridays I tend to make a lot of calls on Airtel because on Fridays Safaricom has problems and Airtel becomes the better option."

c) CI27, "I also use Airtel when I go to remote areas and there is no Safaricom network coverage."

d) CI29, “Outside Nairobi, Airtel has a stronger network, Safaricom has network but a very weak signal."

e) CI27 Also stated, “Mostly Safaricom has that network problem, the good thing about Airtel is that I can use them anywhere, when I travel to Western I could get full Airtel signal but no Safaricom network at all.”

On the contrary CI05 had a relatively opposite experience to CI27 in the same region and stated, “at times the network does not reach, for example, Western Province Safaricom is much easier to use than Airtel because of network”. Again, Airtel also had its share of comments contrary to the above;

a) CI01, “Airtel network breaks down”.

b) CI04, “As much as Safaricom has a lot of subscribers, but they are still able to contain us. But Airtel they might be cheap but sometimes you can't reach people because of the network."

c) CI24, “Basically I changed because of the strength of the signal, I used to get difficulty in basements and inside buildings, but good networks with Safaricom, and I haven't noticed any improvements in the Airtel network."

Whereas some customers had bad experience with either network, some customers, for example, CI05 see that the problem is common with all carriers and stated, "Sometimes Airtel goes off, Safaricom goes off, so I use the other network". CI28 also complained about both and stated," When I'm outside the house there is Airtel and Safaricom, but when I'm inside the house both are not very clear."

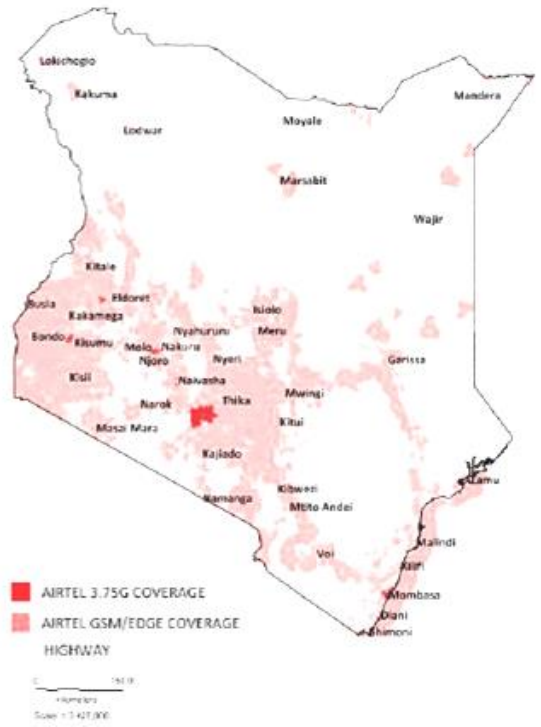

Figure 1. Airtel network coverage

Retrieved from Airtel (2015)

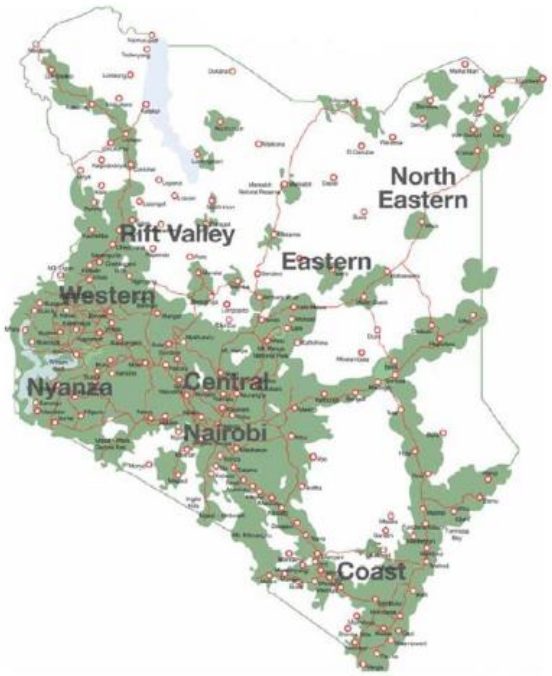

Figure 2. Safaricom network coverage

Retrieved from Aviat Networks (2011).

To justify the above claims, the coverage map of Safaricom and Airtel were compared (Figure 1and Figure 2). The coverage area of both seem to be relatively consistent in the locations with highest population but as can be seen Safaricom does have a stronger footprint and a remarkably stronger coverage in the Northern Region that is not so populated. Nevertheless taking the ratio of subscribers which is 5.2million for Airtel compared to 21.5m for Safaricom (CA, 2014) it can be understandable why Safaricom customers complain more about the congestion of the network. In all cases, the coverage area in 2015 still remains at 38% of the total geographical area of Kenya with still much potential for advancement and improvement (Oteri, Kibet, & Ndung'u, 2015).

Orange and YuMobile networks were both criticized by 92% of the participants for being inconsistent, unavailable, and very slow. With exception of three customers

who commended Orange for their good internet, and the two customers who still use YuMobile, the rest of the customers who had tried using YuMobile or Orange were not satisfied and ended up disregarding these carriers.

Services and products. Mobile money and mobile banking services alone counted towards 8.43% of the reason why customers refuse to churn and 31% of the reason why customers stick with Safaricom in particular. In fact, if there was ever such a thing as sticky service as the Safaricom manager had phrased it; the top stickiest service would be Safaricom's *M-Pesa*. Other services such as credit borrowing, M-shwari savings account, and others were referenced 57 times compared to the astonishing 71 references for Mobile money alone. Again, if all the references to services were combined, they would stand at 128 slightly beating the price as a major reason for churning.

There are three main reasons why M-Pesa is a very sticky product to Safaricom despite all other carriers adopting the same mobile money service very soon after the remarkable success of M-Pesa. These causes as explained by the customers are,

(1) Wide distribution and abundance of M-Pesa agents in every corner of the country compared to those of other carriers. This was reflected in the following comments;

   a) CI04, “M-Pesa is everywhere, just look at how many agents there are for Airtel, you can walk up to Congo and you’ll only get one agent.”

   b) CI07, “It’s not just about the price, I would want their agents to be everywhere."

   c) CI08, “but Airtel money is not available everywhere, what if I decide to use Airtel and when I go upcountry I can’t find an agent.”

d) CI09, “I keep Safaricom because of business like M-Pesa because Airtel money is not much available in the places I travel to."

e) CI12, “I can’t throw away Safaricom because I’m using M-Pesa, but for Airtel money they had some problems and it is not common, as in this area (refereeing to the region where the interview was taking place) I've never seen an Airtel shop."

(2) The continuous enhancement of the M-Pesa service by adding more partners who accept M-Pesa as a form of payment, introducing the *pay-bill* options and the *M-shwari* savings account that is linked to the M-Pesa. But most importantly the addition of mobile banking to the M-Pesa platform , this has forced many customers to stick with M-Pesa as described by the customers below;

a) CI02, “M-pesa is a banker to many people, I hold Safaricom because of the banking system."

b) CI13, “Banks are also merged with Safaricom, and it is convenient to connect you to your bank everywhere and it covers almost 90% of Kenya.”

c) CI163, “Also the Online Banking which is a partnership service between M-Pesa and certain banks, they tell you all the good services, and I felt that it made me subscribe to their services.”

d) CI22," I have Airtel-money, but most of the people who are on that are very few. Also, the banks that interact with operators are using M-Pesa not Airtel-money."

e) CI23, “I work in a bank, and I know we use Safaricom for our platform, so it is quite difficult to switch."

f) CI24, “M-Pesa agents don't really affect me because I use the banking platforms to move money from the bank to M-Pesa and otherwise, so agents don't make a difference for me."

(3) Despite that Airtel managed to link its Airtel money to Safaricom’s M-Pesa allowing its customers to send money from Airtel Money to M-Pesa agents and customers; it still seems difficult to change as indicated below;

a) CI09, “Airtel money is much harder to use because the codes have letters and numbers, so it is difficult for old people to use but for Safaricom the codes are numeric only.”

b) CI29, “Even if you can withdraw from an M-Pesa agent you still need to load the Airtel Money from their own agent, which is not available. Without loading it is very difficult, so Safaricom becomes more convenient."

It is worth noting however that despite the stickiness of M-Pesa and the multiple benefits it has provided the Safaricom and the community in general it is the biggest cause of customer care calls and complaints. Approximately 16% of the customers have sent money to the wrong number and had to call customer care to reverse that transaction causing an extra load on the customer care center and resulting in long queues. Thus it was common to hear, "you can wait for hours before someone can receive your call, it can take up to two days looking for customer care” as CI04 complained.

Word frequency from customer interviews did not reveal any useful pattern or words of particular meaning to this analysis and thus was excluded. The previous section reflected a simple comparison between the perspective of the carriers and their customers clearly indicating what they valued most and believed are most important factors causing churn. In the next section, further analysis on behavioral and economic patterns possibly causing churn are going to be explained thoroughly based on the in-depth analysis of the customers' and managers' responses to interviews. This will be done by answering the three sub-questions of this dissertation.

Analysis of the Three Sub-Questions

After reviewing and analyzing the two perspectives, and linking all the data sources together, the next step was to answer the three sub-questions. Several factors caused the different aspects discussed above; it could be economic, psychological, cultural, or any other external influence such as marketing and group think as the Nvivo10 analysis had reflected. The next section will analyze the three sub-questions in isolation from the perspectives discussed above. The first sub-question was, "what are the behavioral patterns causing churn?"; the second sub-question was, "what are the economic patterns causing churn?"; and the third was, "what are the different regulations and policies causing churn?" Afterwards, linkage between the two parts of the analysis will be made.

Behavioral Patterns Causing Churn

The first sub-question discussed the behavioral patterns causing customers to churn. Information regarding these patterns were gathered mainly from customer interviews (Appendix A) and specifically from demographic questions number 1, 2, 4-6,

also from interview questions number 7- 10,12-14, 17-22, and 25-29. These questions did not only evaluate what customers valued the most, but went in-depth to investigate why customers were churning and using multiple lines, or alternatively why they swooped from previous carriers they were using to ones they are currently using. Appendices H, I, and J provide an extensive summary that reflects to a great extent the different calling patterns and the effect of different psychological and demographic factors affecting customers' behaviors. A different perspective was also provided by investigating the customer care interactions and social media page of each carrier. Yet the true answer lies in the comments of the customers and their rich explanations revealed during the interviews.

Table 9

Gender vs. income

Income level	*Female*	*Male*
0-6,000 ksh	36.5%	33%
6,001-40,000	18%	27%
40,001-100,000	27.3%	20%
>100,001	18.2%	20%

Demographics. The field research took place in the city of Nairobi where the greater percentage of the educated population settles. A noticeable pattern from the demographic classification sheet in Appendix G is that the female population had higher education levels, but slightly lower income levels as shown in Table 9. The unemployment level is the same between the two genders. The occupations held by both

gender were diverse and captured a wide range of fields. Gender showed no effect on churn but reflected a slight relationship with knowledge of tariffs. Oghojafor et al. (2012) had similarly reported the insignificance of gender on churn although their research findings on marital status were contrary to the findings of this research.

Social status. The majority of the customers interviewed were married, representing 46% of the sample. Only one out of the 15 married participants felt that there was no difference in the calling pattern before and after marriage; whereas nine used to call more before marriage; two currently call more after they got married; and three do not quite know because they only got cell phones after they were already married. Similarly, the five participants who were in a relationship all call more during their relationship. When combining all the singles, widows, and single mothers, five out of six stated that they spent more when they were in relationships whereas only one called less after the passing away of his spouse. This shows that an astonishing 69% of customers call more when in relationships and less if they are single or married.

This behavioral pattern was found to be independent of other demographics such as location, gender, occupation, or income level. Despite previous researchers did consider personal relationships to be an important factor (Wong, 2011a), Oghojafor et al. (2012) had found that marital status was irrelevant to churn. This might be a trajectory new finding in this field indicated from this research's findings that 69% of people call and text more when they are in relationships, and 60% of married people call less after marriage. This raises an alarm to carriers who have not been using social status as a segmentation criterion.

Group think. If there was anything more tying people to certain carriers, it is defiantly their relationships with other people around them. Results showed that spouses and family members using the same carrier caused the bigger part of group effect, but also friends, coworkers, and even customers were a big reason why customers stick to a certain carrier. Roos et al. (2005) stated that club effect can sometimes cause customers to become loyal to their carrier. This type of loyalty is very effective in expanding the customer base by satisfying social groups or clubs with multiple members. Results showed that 73% of customers reported the influence of others in their choice of their preferred carrier. CI02 stated, "I use the orange line to call when I want to talk more, or when I want to use for family usage… Most of my family is using orange, and that is the best thing". CI03 frankly stated, "Family and customers mostly use Safaricom. I just use Safaricom, the more I use Safaricom the mentality to go to other networks is not there. The more you use Safaricom, the more you get stuck with them". CI05 similarly stated, "My family uses Safaricom, my Airtel customers on my phone book are about 15-20%." CI08 felt the need for others to move and stated, "If others all change from Safaricom I will change". Likewise CI20 said, "All my family use Safaricom, Airtel only in the place of work and colleagues. I would like to retain both of my lines, I can get an additional line if necessary if more people join a new network, but I can't get rid of Safaricom because even if my family decides to switch there is still friends and other contacts that will remain".

Best explanation came from CI28 stating, "I will see the stability of the new operator first, we have seen YuMobile and Orange that have come with good price, but they have not appealed to Kenyans, Kenyans move with the crowd, Safaricom caught

people's heart". CI21 had a different perspective fearing the opinion of others when calling from a non-Safaricom line and stated, "When you call someone from an Orange line people feel a stigma because they don't know what kind of line you are calling from". Unfortunately for carriers, there is very little they can do to solve this issue apart from trying to strongly influence larger groups such as college students and large corporations to join their network. Therefore, the more the people join a certain carrier, the more group-think plays a significant role in attracting others to using the same network as explained by CI24 who stated, "Most of my connections use Safaricom that was what influenced me to use Safaricom".

Stability of the carrier; creating comfort zone; resulting in loyalty. This subtopic is, in fact, three reasons why customers churn as per node analysis from the Nvivo10. Yet when looking closely, it turns out that the stability of the carrier is causing some kind of comfort zone resulting in loyalty, or in precise terms *forced loyalty*. Stability of incumbent carrier was referenced 31 times by 16 participants. Participants showed reluctance to join new carriers in fear of their instability. CI01 stated, I will try the new offer first for a month or two then afterward decide if I will continue". CI04, explained in more details, “I just like Safaricom, when Safaricom and Airtel came, Airtel came first, but Zain started changing names to Celtel then Airtel, so the changing of ownership created confusion, is this company coming to stay or why they are unstable or is it their management. So I trust in the stability of ownership of Safaricom". Similarly, CI05 stated, "I can only change to networks that are established and have a strong network. About a month ago my YuMobile was connected to Airtel I think they are using

the Airtel network now, so I can't see how I can trust them when they are using Airtel network".

Such instability and change of ownership multiple times has forced 100% of the sample representing the Nairobi population to use Safaricom either as a primary or at least a secondary line to avoid the inconvenience of having their primary carrier fail at any point in time. This extensive dependability on Safaricom has created a comfort zone which was referenced 53 times by 23 participants. It is so extreme to the extent that customers actually prefer sleeping in their comfort zone than attempting to switch or even bother to learn about other networks. CI03 stated, "We are used to Safaricom so much, we eat Safaricom we dream Safaricom, it is a matter of time that we are starting to use other networks" and went on explaining, "It's not the operator, it is a matter of me being used to using Safaricom for so long even though they have had some problems. CI22 further explained, "Safaricom has become more or less like a brand, it is just like Tusker (*the national beer*) to Kenyans it is more expensive, but it is what identifies Kenyans. If I start using other numbers people will start thinking what is that line?" This comfort zone has brainwashed people to the extent of letting CI07 think that Safaricom is cheaper and that he is still paying 1ksh per minute rather than the current 4 Ksh he is actually paying! This phenomenon has resulted in forced loyalty. Literature showed similarly that satisfied customers with higher income, higher education, and higher involvement were less prone to churn and less affected by negative word of mouth (Keaveney & Parthasarathy, 2001). Loyal customers also tended to give more positive word of mouth (Ferguson & Brohaugh, 2008).

CI10 has become a loyal customer stating, “It is the line I landed on a long time ago I am ok with it.“ CI13 is no different, “Safaricom is the best, Safaricom is everywhere, it can be seen by itself and everyone is talking about it, it is advertising itself better than advertisements telling you about this and this”. CI14 has actually disciplined himself to using his preferred carriers stating, “I’ve been very disciplined to Safaricom and next with Airtel because they give me good services." The bottom line is as CI16 stated, "I'd love to save but not by changing the lines."

Loyalty programs. It is important to note that the loyalty of the customers explained above was not directly influenced by loyalty reward programs such as Bonga points of Safaricom, Airtel Zawadii, or Orange's Ziada programs. Only 19% of the participants found such reward points attractive whereas the rest either do not use it or find it ineffective because it accumulates points at a very slow rate thus not adding much value.

Phone number. The phone number that identifies the person is important. The longer the customer stays with the carrier and the more the contacts and connection, the more people get attached to their numbers. Actually, 38.5% of participants felt that their number was indispensable and that they could not change carriers because of their phone number. Despite the introduction of Mobile Number Portability (MNP) in Kenya it has had very minimal effect because of two reason, (a) the service has not been well communicated to people, as only 7% of the participants were aware of this service; (b) churning using MNP results in customers losing their services of the carrier they are leaving thus if they leave Safaricom they lose M-Pesa, Bonga points, M-shwari and so on. Even after participants were made aware of the MNP service 54.6% refused to use it,

only 30% were willing with the condition that their services and network coverage remains unchanged, which is impractical. Those who were unconditionally willing to use MNP were only a total of 15.4%. Although Park, Kim, and Lee (2007) reported that 40% of customers in Korea were willing to churn, it seems that time and geographical location has caused a significant impact on customers' opinions. Shin and Kim (2007) reported that MNP was insignificant to churn but rather encouraged fair competition between carriers which is a much closer result to the findings of this research.

Phone sharing. Although this behavior was mainly attributed to villages, the analysis showed that 50% of urban customers also do share their phones with family members when at home. This type of sharing is different from the sharing that Sey reported in previous research (Sey, 2009). In Nairobi, family members only share their phone when one member does not have enough airtime on their phone thus uses other members phones; however, all family members have their own private phones that they use. This change in the description of phone sharing may be attributed to the reduction of phone prices and the increase in economic status making phones much more affordable even for lower earning classes. Further research in rural areas is required to investigate this attribute in greater depth.

Education, and customer knowledge. Although 88.5% of customers did not know what tariff they were on or stated wrong tariff, two-thirds of the remaining 11.5% who did know their tariffs correctly were females. As explained in the demographic section, females in the sample were of higher education levels than males. This could be probably why knowledge of the tariffs was more in female than they were in males. But with such an insignificant ratio of knowledgeable customers it is difficult to be certain.

Analyzing participants' responses reflected that 50 references from 23 participants displayed their ignorance of the products and services in comparison to 25 statements from 14 customers only representing correct knowledgeable statements.

Nothing can dilute the fact that the majority of the population have no idea what the carriers are trying to provide, but as described above sleeping in a comfort zone. A great part of this problem is due to the extensive introduction of new tariffs and products without properly advertising them. Despite all participants complaining bitterly about the price, there is a lack of enthusiasm causing customers to ignore searching for better offers or even to bother finding out how to reduce their calling costs. Some participants stated that they do not even bother reading the marketing text messages that their carriers send to their phones. CI12 was a great example stating, "I don't follow because these are marketers, and they have to market. I do see the text messages, but I don't consider. I know about *Uwezo* tariff from the messages, but I don't need to subscribe. When I need information, I enquire from friends. I listen to the marketing campaigns, but I don't keep them in mind because I know they are in for business". Similarly CI02 stated, "I don't use Internet on my phone. I don't know about available bundles. I get SMSs advertising these offers, but maybe they will not last long. Such things don't make sense".

Carriers understand the need to educate their customers, and as Keaveney and Parthasarathy (2001) reported that customers' service pre-experience and post-purchasing experience can reduce churn. Thus, carriers will keep informing customers of new tariffs and promotions, but many, if not most, customers will keep ignoring such messages. What customers really need is very complicated. Customers want cheaper prices, higher quality of network, stability of network and the carrier ownership, and a nearby agent

everywhere they go. Yet they are not willing to step out of their comfort zone or take the trouble of opening a text message to learn about a new service that would deliver their requirements to their doorstep. A probable solution could be in the next section to entice carriers to deliver and customers to react.

Economic Causes of Churn

Whereas behavioral patterns involved social and psychological factors that could be affecting churn, economic reasons included more tangible and quantifiable causes. Demographic questions numbers 3-6 and interview questions number 9-11, 15-16, 23- 24 and 29 from customer interviews (Appendix A), were the primary sources of information for this sub-question. In addition, managers' interview (Appendix B) questions number 1-2, 8-10, and 15 were also addressed.

Income. Wong (2011a) reported that income level has a direct influence on churn. Similarly, the analysis of the income table in Appendix K showed a direct relationship between income levels and the amount spent on mobile usage, such that the higher the income level, the more spent on mobile usage. However when calculating percentages it appears that the two lower income groups gaining from zero to Ksh 40,000 spend up to 100% of their average income. The ratio of money spent to average income (total money spent/ average income) is approximately 36.5% in average for the lower two income groups, whereas for the higher two income groups, the average is only 4.5%. This ratio analysis indicates that there is a certain range of phone usage that customers vary within despite their income groups. In other words, the lowest earners still use a *minimum* level of 6.5% of their average income whereas those who earn 100 times more use a *maximum* of 7.1% of their average income (Appendix K).

The effect of the variance of income, as seen from the analysis tabulated in Appendix K, is very relevant to this dissertation and to decision makers of carriers. The responses were grouped into four categories; (a) those who use their minimum, indicated by the comment "If I get more I will use more"; (b) those who are using their maximum, indicated by the phrase, "If I get less I will use less"; (c) those with variable calling patterns who stated, "if I get less I use less but if I get more I will use more"; and (d) those stable users whose cost will not vary based on their income and commented, "No difference".

It appears that 56% of the lower income group who earn between 0- Ksh 6,000 are already using their *minimum* that they cannot go below, and thus quoted, "when I earn more I call more". Only 11% are using their maximum, 11% vary their usage based on the variance of income, and 22% do not feel that a change in income will cause a change in their usage. The average usage of people in the lower income group is only Ksh 1,500 per month. The higher two groups earning between Ksh 6,001-100,000 use double that of the lower group at approximately Ksh 3,000 but with a relatively opposite spending pattern. Apparently, 41% of the customers in those two income groups already using their *maximum*, 8% of the group using their minimum, 16.5% with variable usage, and 33% with stable usage. Similar to earlier research on income (Ranaweera, 2007), the group earning above Ksh 100,000 and spending an average of Ksh 5,700 were quite consistent, with 80% stable usage that feel they will not be affected by variance in income. Only one out of five stated, "if I get less I use less, and if I get more I use more" signifying variable usage based on income.

Price irrelevance. When one minute cost Ksh 30 in 2005-2007 a slight percentage in price difference went a long way in attracting new customers as was the strategy of Safaricom at that time becoming the *better option* (their slogan). However when the minute now costs Ksh3 (equivalent to $0.033) a discount of one shilling no longer made a remarkable difference. Despite all the participants referencing price in the interviews, CI03 stated, “I don’t mind the small additional charges." CI07 further explained, "I would think of moving if there is a significant difference in tariff rate, but the current difference is only 1 shilling, so it is not a big difference." CI28 felt that for price to make an impact, it must be significant, as stated, "Orange has only reduced by one shilling which is not a big deal, but if they decrease by 50% they will get many people to buy Orange, then if there are many people who have Orange we will be able to use it more. It will cause an impact”.

The availability of multiple carriers and the advancement in phone technology from single SIM phones to dual, triple, and even quadruple SIM phones have convinced some customers to just buy an additional line to make use of offers on other networks rather than completely churning. CI02 stated, “Even if I get cheaper offers, I will remain with my two lines and I will buy an additional one." Based on the customer's perspectives on price, network, and services, it appears that price alone is no longer a major concern unless coupled with the right mix of network availability, products, and services.

Employment status and business usage. Oghojafor et al. (2012) reported the income, occupational status, and place of residence were highly significant to churn. Results indeed showed that the rate of phone usage of participants fluctuated based on their employment status. Although the highest users were managers, bankers, a business

owner and a priest; the lowest usage went to those in the education industry, business owners, and office managers. Unemployed people were not amongst the lowest spenders but ranged in the middle together with managers, students, and medical representatives. This indicated that the occupation or employment status is relatively irrelevant to churn. Nevertheless when analyzing participants' answers, 57% had dedicated lines for business usage some of which stated;

a) CI02, "I use Safaricom more because most of my clients are on Safaricom".
b) CI03, "Safaricom is for work as it is known by all clients".
c) CI04, "I use Safaricom as my office it is basically for business".
d) CI06, "My family uses Airtel. The parents of the kids I'm teaching are the ones using Safaricom".
e) CI09, "Most of my clients are using Safaricom, so I use Safaricom, calling from Safaricom to Safaricom is the same as from Airtel to Safaricom so it doesn't make any difference".
f) CI18, "Airtel for work and Safaricom for personal".
g) CI19, "Airtel is for business, but Safaricom is personal".
h) CI29, "Airtel is more of a private line, so not many people have that number, Safaricom is more of my public phone".

The analysis further indicated that Safaricom customers using their SIM car for business purposes spent as much as four times on the business line compared to the personal line. However with Airtel business lines, it was only slightly higher and never exceeded two times the amount of money spent on the personal Safaricom line. This could be attributed

to Airtel being cheaper than Safaricom, so customers who use Airtel for business tend to get higher value for money by making more calls for less money. This should be a worrying point for Safaricom and a big opportunity for Airtel to target pre-paid lines used for business purposes.

The cost of receiving calls. Refusing to churn because of the cost incurred by others trying to contact the customer is a new factor that never appeared in any research on churn. This could be a new variable that requires further investigation. Although only four out of 26 people commented on the cost of receiving calls, there have been multiple references in the behavioral section about customers not churning because of the number of other people on the same network. Groupthink could be a direct cause of this new finding, however only a few participants considered mentioning it in the interviews. For example CI01 stated, "The cost of other people calling me when I'm on another network is higher which makes me not consider moving." Similarly, CI27 said, "Like for YuMobile, there were not many people on Yu and I would not know how much they would charge from Yu to Safaricom."

Marketing. Both Ginn et al. (2010) and Sutherland (2007) reported the direct effect of marketing campaigns and promotions on churn. However, the fast change in the telecommunication industry has caused customers to drown in piles of promotions but with very little information and knowledge about them. Customers find value when a carrier imposes a discount or provides bonuses on regular call plans or the product they are using, such as CI06 who stated, "Airtel has given me bonus calls, even if Safaricom gives such offers I'll not throw away Airtel". Nevertheless, customers do not want to bother subscribing to promotions that may save them money, and those that subscribed

have had bad experience and often unsubscribe themselves. In other words, if a carrier approaches clients with a 50% bonus airtime or bonus data for each time they top-up their phones, they get much more publicity and attention than if they approach the same client and ask them to subscribe to a different tariff that will give them 50% bonus when they use their airtime. Although both scenarios provide the same result the message communicated seemed to have opposite impacts on customers.

Apparently 38.5% of customers do not consider any kind of marketing and feel that they are ineffective. However, the customer analysis also shows that 35% of customers value TV commercials because they attract their attention, and 11.5% of customers value direct interaction through face-to-face or door-to-door marketing such as CI05 who stated, “We like seeing the real thing, we want to believe not by advertisements, we want people to come to the ground and tell us”. Remarkably this is very similar to what stated Xevelonakis (2008) that if customers are correctly and regularly approached with the right product at the right time customer satisfaction would always be at high levels, and churn would be reduced.

Despite that many feel that the marketing campaigns are not effective, the references from Nvivo10 show that 31 references were in favor of marketing whereas only 16 references considered marketing irrelevant. Some of the comments were actually really supportive such as CI04 who stated, “The reason I’m still with Safaricom is they did marketing very good." CI16 has actually decided to take action after a few adverts, and stated, "If you bring nice adverts that attract the attention and good talks about the products I would be waiting for such TV commercials to come back --- I heard about M-Shwari from radio then TV so I listened to it several times then I decided to subscribe”.

CI29 seconds that opinion stating, “In traffic I would read billboards, but what I would really concentrate more on is TV, so if their commercial is interesting I would wait for it again then start comparing what they have to provide". Some customers actually blame new market entrants for not informing them enough about their network and services, as CI27 stated, "For orange I haven't heard word of mouth from anyone, no one is on orange except our landline." So it appears that despite operators flooding the media with all kinds of adverts, customers are not paying much attention, yet at the same time blaming carriers for not providing sufficient information.

Several customers felt that they were being robbed, and that the carriers were overcharging for their services, whereas that marketing campaigns is a good way to cover it up. For example CI27 stated, "Sometimes back, I felt that their data bundles are very expensive, I'll still call it stealing, so I moved to Airtel." One of the possible solutions for this problem was recommended by Airtel managers when he stated, "We should try to customize products and make auto renewal of services to only 30 days." This would actually lead clients who wrongly subscribe to services they did not use to drop out of money consuming services and prevent them from feeling that they are being misinformed or robbed of their money.

Carrier Policies Causing Churn

The final sub-question investigated the effect of the carrier policies and regulations causing churn. Data gathered from websites, publications, and management interviews were the primary source of information, with an additional perspective from two questions from the customer's interviews and social media. The first section of this

sub-question will concentrate on regulatory decisions followed by carriers' internal organizational policies.

Effect of politics, and regulatory body. All carriers agreed that the effect of political changes, or regulatory decision, was neutral to their business because it affects all four carriers equally. Despite that the communication authorities reduced the mobile termination rates in an attempt to reduce the customer's cost of communicating, this has however affected the incumbent carriers the most as they allow competitors to become cheaper when making off-net calls. This information is supported by CA's statistical analysis reports showing that on-net calls generated 99% of Safaricom's traffic whereas off-net calls generated 65% of Airtel's traffic (CA, 2014b).

The manager of Orange complained about one of CA's rules forcing regulation that poses loyalty programs after 90 days and stated, "We can't collect the data for a consecutive 180 days because of such regulation." This latter regulation probably has considerable effect on information regarding churn. Most carriers consider a customer to be loyal if they have remained a customer for six months or more, but without collecting sufficient information it is difficult for carriers to keep track of their loyal customers. Surfing through the communication authority's website did not reveal any visible indication of such regulations but maybe carriers received such information in a more confidential form.

Another regulation that has assisted carriers significantly is the mandatory SIM card registration. The program was initiated primarily to prevent mobile and electronic fraud. However, it has also assisted in providing much more demographic information

such as age, location, and gender, among other information proving to be useful in market segmentation and positioning.

Mobile Number Portability (MNP) showed minimal effect, despite CA reporting that there are 1,388 in-ports (CA, 2014b). The 7.7% of clients who know about MNP appear not to have sufficient information indicating that it has not communicated well. Despite that carriers' websites providing relatively sufficient information for internet literate customers, those compose only 43.1% of the total mobile user population (CA, 2014b), and indeed are composed of the younger, more educated group of people. The rest of the mobile user population does not have easy access to any information on MNP service.

Market segmentation and positioning. All carriers target the mass market with three of the carriers concentrating on business clients applying the 20-80 rule with relatively close proportions. For example, Safaricom reported 13% of their customers produce 80% of their revenue. Only YuMobile segments the market by age and concentrates on the niche youth market; however, there is a recent general trend by all carriers attempting to segment customers based on their age group. This type of segmentation has relatively affected the 80% of customers who spend less as they do not get sufficient attention from their service providers. According to the customer's analysis 92% of participants have complained about network quality and an astonishingly 100% have commented about the relatively slow customer care assistance, although some participants were more tolerable than others.

Customer base and distribution channels. As Gillwald and Mureithi (2011) reported that network expansion provided great benefits to customers, but it affected the carrier's financial situation negatively. The analysis showed that there is a relative direct relationship between the customer base and customer support delays. This means, the

bigger the customer base, the more it takes for customer support to solve customer's problems, making them become unhappy and want to churn. Table10 shows the average number of mobile money customers that each agent must serve which explains why customers may be unhappy with the customer service. It is worth noting that Safaricom increased its agents by 11% from June 2013 to March 2014 (CA, 2014b) indicating their realization of the problem and positive acting towards their clients complaints.

Table 10

Number of mobile money subscribers vs. number of agents as of June 2014 (CA,2014b)

Carrier	*Number of subscribers*	*Number of agents*	*Average Customers per agent*
Safaricom	19,776,056	80,230	246 customers per agent
Airtel	3,238,754	10,990	29.4 customers per agent
Orange	185,463	9,231	20 customers per agent
YU Mobile	N/A	N/A	N/A

Despite the interviews showing that 30% of Safaricom's customers were not willing to change their carrier, there were multiple complaints on their social media webiste. And despite that Orange faced a drop of customer base from 3,122,751 in June 2012 (CA, 2012) to 2,453,898 in March 2014 (CA, 2014b) with a remarkable 28.6% drop in customer base in the first half of 2103 (CA, 2013a), their social media shows that the happiest customers are those of Orange which is now considered the fourth carrier in terms of client base. Such figures coupled with customer responses explain that customer happiness is directly related to the speed at which the carrier serves its customers which directly translates into the number of agents and customer care centers.

The 30% of Safaricom's clients who reported that they were not willing to churn and the other 30% that found it difficult to churn were reluctant to do so because of three main reasons, a) the popular M-Pesa mobile money service, b) because of the wider distribution channels and ease of finding agents of Safaricom which is not available with other carriers, and c) fear of losing their phone number. For those who are using Airtel as their primary line, their reasons were different; they refused to churn because of, (a) the stronger network quality of Airtel, and (b) cheaper prices. Thus the analysis indicated that 60% of the customers actually follow incumbent carriers mainly because they have better network coverage followed by a wide presence and spread of agents countrywide even if they complain about the high cost and the low speed at which they receive support.

Innovation and variety of products and services. Lee, Yu, Yang, and Kim (2011) reported that innovation is the main factor of customer churn in a saturated market. In Kenya Safaricom and Airtel pride themselves on being the leaders in innovation and in providing what Safaricom manager called *sticky products*. Carriers clearly indicated that customers needed such products to the extent that even if they leave they will soon return because of the stickiness of their products. Orange has followed the lead with a number of innovative products as well, whereas YUMobile is a little bit lagging behind the competition. With the mobile industry entering into other Value Added Services (VAS) and many different non-mobile services included on the mobile platform; there is virtually an endless number of services that carriers can provide. The question investigated next was, "are more services better or worse?"

Airtel manager stated, "We provide the flexibility of choosing from a variety of products. Customers are provided with different services and it is up to the customer to

choose what service they want." Yet the same manager continues, "Our marginal customers are between 25-40% mostly uneducated, when they use non-voice, value added services (VAS), like the Caller Tunes they are unable to control their usage and are unable to deactivate the product". This leads to customer's money and airtime getting exhausted on unwanted services.

Although Orange considers innovation a core value; the incumbent carrier, Safaricom, is privileged with a wide customer base that allows them the luxury to expand their products and services with ease. It seems that not all products and services are used as much, for example the entertainment services have been used by only 11.5% , two-thirds of which later unsubscribed from the service because it was withdrawing unnecessary charges. Nevertheless, many innovative products are introduced by the carriers in hope that they would appeal to their customers and generate both loyalty and revenue.

One innovative product that did make a big difference in this industry and is the main cause of stickiness of customers is Mobile Money. Mobile Money clearly filled in a gap in the banking industry, in addition, Mobile Banking brought banks closer to their existing customers. As much as innovative products are being introduced it is hard to tell which will make a great impact in the long run, but in such a competitive industry the carrier that will fail to innovate will defiantly be left behind. So basically the rule is to keep innovating but also ensure that the customers do not drown in endless choices making them frustrated and ending up not using any such services.

Complexity vs. Simplicity of products and promotions. Safaricom figured out the dilemma and confusion that customers fall into when having to choose between the

numerous tariffs. Safaricom had thus removed all their different tariffs and concentrated on promoting *Uwezo* tariff only. YuMobile, the newest entrant, was still trying up five different tariffs hoping that the diversity of the product will appeal to a wider range of customers and attract new ones. Whereas Airtel has three and Orange is currently at four tariffs. Again the problem is as the Orange manager mentioned, "there is still a lot of ignorance, and customers don't know what they want." Airtel manager directly related the cause of churn to the availability of too many products and services in the industry and that customers sometimes subscribe and get charged for services they did not ask for or want.

The fact is only 23% of the participants were aware of which tariff they are on with Safaricom because it was only one tariff, and because Safaricom continuously communicated this sole tariff through text messages. However, *none* of the customers of other carriers could name their tariff correctly. Nevertheless, certain products are very sticky and prevent customers from churning or at least force them to stay with the carrier that has the highest reliability in providing the wanted service.

Customer awareness and marketing campaigns. Analysis of different media, advertisements and other propaganda show that carriers spend generously in educating their customers about the brand and the products available to their customers. Unfortunately, this has still not helped many of the customers identifying what tariffs are currently available and what promotions are running. The 23% of the customers who know what tariff they are subscribed to are only aware because Safaricom keeps reminding its clients of their tariff every time they top-up airtime, the rest have never

bothered asking and think it is too complicated to understand the different tariffs and to move from one calling plan to another.

Fifteen percent of participants found it irrelevant to change tariff because of the price insignificance and small difference thus not bothering to learn more about the different tariffs. CI03 stated, “No I’ve used this tariff ever since - It has not been so interested because the price difference is not big enough for me to consider changing", Similarly CI07 stated, "I would think of moving if there is a big difference in tariff rate, but the current difference is only 1 shilling, so it is not a big difference". Again with a similar comment from CI19, "I stopped because I found that they change us automatically without our consent, and I found that the rates of different tariffs are more or less the same".

When the Orange manager said, "Customers don't know what they want," he was not exaggerating. A good example is CI11 who responded to the question on number portability stating, "Yes I might consider changing because that same number will remain, and my friends will still know my number. But I'll not move from Safaricom because of M-Pesa”, yet five questions later her statement changed to “I will buy three phones or swipe Safaricom with Orange”. And in answering the last questions it became clearer that she really did not know what she wanted when she stated, "I read an Airtel advert that gives 100% bonus, but it did not affect me much," then when asked what would affect you? The answer was quite confusing, the participant responded, "I'm willing to change if the price is cheaper”. Implying the willingness to change with conditions but not really knowing which line to change and most probably such kind of people do not really know what they want. It is relevant however from customer

interviews that TV and radio commercials are very effective to many; whereas, also direct interaction with customers through door-to-door marketing may have a great effect on educating customers and attracting new ones.

Network advancement and quality of services. No matter how much is said, the network quality issue cannot be emphasized enough as it holds the key to the problem of churn. Carriers are aware of the dire need to improve network quality and wider coverage of network as communicated by all four managers. Similarly, customers consider the network availability, the number of agents and distribution channels, followed by slow customer service as the most crucial factors that beat their dire need for price reduction. Network expansion is expensive and requires massive capital investments; nevertheless, it is one of the major causes of client complaints. Even though 30% of the clients refuse to churn because of their loyalty and trust in their carrier and understanding of the congestion on the network, and hoping that the network will improve soon, it is a problem that customers could not stop complaining about throughout the interviews.

Summary

This Chapter presented data gathered from several different sources. Websites of carriers and the regulatory body provided the first set of data used in this dissertation, followed by secondary research on other media sources from the Internet, publications, newsletters, advertisements, and the social media. Primary data was then collected by interviewing four managers, one from each carrier representing the opinion of the carrier on the problem of churn. The final, yet most crucial stage, was the field data that was gathered from 26 participants from four different locations. This was done after ten pilot interviews were used to ensure the reliability of the data gathering instrument. The data

gathering instrument used for field data gathering was an open-ended, unstructured, face-to-face, in-depth interview.

The interviews with managers and customers were both guided by the interview questions however plenty of freedom was left to the participants to drive the discussion, within allowable boundaries, to where they wanted to express themselves. The extensive data collected was analyzed in two different phases; the first phase investigated the different perspectives of carriers versus those of customers showing similarities and differences in the way the carriers and the customers thought. The next phase aimed at answering the three sub-questions while linking the results of this research to previous literature and research findings. The first two sub-questions which were more related to the customers investigated the customer behavioral and economic patterns causing churn. Whereas the last sub-question analyzed the actions and policies of carriers that would probably contribute to the problem. The next step is to digest all these information into a quick and simple summary that presents a complete overview of the previous four chapters, in addition, to providing the leaders with recommendations. Finally the limitations and recommend opportunities for further research will conclude.

Chapter 5

Implications and Recommendations

High customer turnover is a serious problem affecting all industries including the service sector (Keaveney & Parthasarathy, 2001). In the telecommunication industry, this problem is commonly known as churn. Churn is the antonym of customer retention. Churn has been often used to refer to customers who switch from one carrier to another, either by changing their SIM cards or by retaining more than one carrier at the same time. An example of churn in Kenya showed that a carrier lost as much as 28.6% of its customer base in half a year (CA, 2013a) indicating the significance of the problem.

Previous Research

Abundant research on the problem of churn in developed countries had been done, but very few on African countries. Although 80% of the customer bases of African carriers are on pre-paid plans, all retrieved research investigated post-paid customers, apart from one that investigated pre-paid customers (Jahromi et al., 2010). All previous research was quantitative in nature and although there are more than 250 variables from data warehouses of carriers that could be useful , none of these variables are qualitative in nature (Datta et al., 2000). Churn prediction software can predict customers who are going to churn with accuracy using statistical analysis of up to 50 different variables simultaneously, but such software cannot predict the actual cause of churn.

Previous research that investigated behavioral patterns could only measure the relevance of up to three factors at a time. Previous research investigated the relevance of the following variables with churn; call plans (Wong, 2009; Wong, 2011a); customer loyalty (Aydin, & Özer, 2005; Veloutsou & Moutinho, 2009); customer relationship management (Jurisic, & Azevedo, 2010); quality of the service (Reichheld, & Sasser,

1990; Myron, 2004); mobile number portability (Shin, & Kim, 2007; Sutherland, 2007) profitability (Xevelonakis, 2005); customer perception (Amitava, 2001); marketing strategies (Sabat, 2005); technological advancement and network penetration (Harno, et al., 2009); marital status (Oghojafor et al., 2012); income level; educational background (Wong, 2011a); effect of friends (Dasgupta et al., 2008); internal organizational policies (Katsianis, et al., 2007); types of products and bundles (Withiam, 1999; Myron, 2004); promotions (Ranaweera, 2007; Joo et al., 2002); and maturity of the market (Jahanzeb, & Jabeen, 2007). One research tried to combine a few causes together indicating that service quality and price both affect the service value (Ginn et al., 2010). Other research stated that customer's behaviors, network performance, and financial performance are quite interlinked to the extent that they cannot be characterized in isolation (Amitava, 2001). However, many of the previous researchers stated that the inability to monitor all factors is a limitation of their study (Antipov & Pokryshevskaya , 2010; Ngai, Xiu & Chau, 2009; Ferguson, & Brohaugh, 2008; Jiang, Au, & Tsui, 2007; Wong , 2011a; Datta et al., 2000).

Purpose and Method

The purpose of this research was to investigate the causes of churn in the telecommunication industry in Kenya. This research used a single snapshot, local, exploratory, theory-building case study design (Thomas, 2011) that aimed to investigate the causes of churn in-depth and from all different perspectives. The qualitative nature of this research enabled the in-depth investigation of the problem while taking into consideration all findings of previous research. The question of "what are the causes of churn?" could only be answered if all the different perspectives are involved and only if

all the factors affecting churn are put into consideration. With so many unknowns, quantitative research would have failed in investigating the possible causes without holding many others as constants.

Sample and Data Collection

To narrow the population, the geographical scope included only the people in Nairobi, the capital city of Kenya. Furthermore, minors and prisoners were excluded due to extensive permissions required to include these two groups. In addition to the above delimitations, only customers who have experienced churn by either holding two or more SIM cards or who have swooped from one carrier to another were allowed to participate. The sample included both pre-paid and post-paid customers without differentiation and resulted in an integral wholesome sample that could confidently represent the population under study.

Data collection included three different sources. The first source was secondary data published on the websites of carriers and the communication authority of Kenya. Other sources such as publications, advertisement, news, events, and social media provided further data regarding carrier strategies and policies. Following secondary data a face-to-face unstructured, open-ended interview with one manager from each carrier was used to support the secondary data and provide and in-depth position of each carrier. Manager interviews were not audio recorded, but the interviews took longer time as they involved taking detailed notes during the interview. Pilot interviews with ten participants assisted in enhancing the interview questions but the data gathered was not useful during analysis stage. Finally, unstructured, in-depth customer interviews with 29 conveniently sampled participants provided the field data. Interviews with participants took place at

four different public locations. All customer interview participants provided their written consent to record the interviews.

The sample was conveniently chosen to cover a wide variety of demographics representing both genders with age ranging from 23 to 68 years. Other criteria such as; income groups, geographical locations within Nairobi, marital status, education, and occupations were conveniently recruited to be as diverse as possible. Appendix G provided a full tabulated summary of the demographics.

Research Question

The research question, "What are the causes of churn in the telecommunication industry in Kenya?" was too broad to be investigated in one question. Three sub-questions defined at the beginning of this dissertation assisted in guiding the research as directives towards answering the primary research question.

The first sub-question was, "what are the behavioral patterns causing customers to churn?" This sub-question investigated all behavioral patterns that could cause churn. This included the different demographical patterns, the effect of family and friends, cultural habits, and loyalty.

The second sub-question was, "What are the economic patterns causing customers to churn?" This sub-question involved investigating the income status, the money spent on mobile usage, and other factors that could have an effect on usage such as marketing and promotions.

The final sub-question was, "What are the policies and regulations affecting churn?" These were mainly related to the regulatory body and carrier policies that are causing customers to churn. Data related to all the three sub-questions were gathered,

analyzed and presented in chapter four. Furthermore, two different viewpoints were also analyzed representing the perspectives of the carriers and the customers.

Findings and Interpretations

The findings from this research could be said to support all previous research with the exception of only one research study by Oghojafor et al. (2012) that found marital status to be irrelevant to churn. It is true that almost all variables measured by previous researchers do affect churn in one way or another. However, when measured in isolation, there is no doubt that researchers would have found and would probably continue to find relevance between their measured variables and churn. Yet, such results might be greatly misleading. As much as different variables do affect churn there is a strong interlink between variables that makes it almost impossible to hold all other variables constant while measuring a single variable.

Figure 3 represents the different causes of churn from all perspectives and its interlinks as found from the analysis of the data gathered in this research. The next section provides a summary of the findings followed by recommendations for leaders. The font size of the causes mentioned in Figure 3 are proportional to the importance of the cause. However, no scaling was used. Also, the relationships between the causes were not tested. Thus, this figure is only a representation of the causes while highlighting the complexity of the problem due to interlinked causes.

Carrier Perspective

The first part of the analysis involved thorough investigation of the carrier perspective fueled by secondary data gathered from public websites and manager interviews. The four carriers had many comments in common when it came to causes of

churn and how to prevent it. Nevertheless, their opinions also differed based on the stability of the carrier, their customer base, their services, their network coverage, and strength.

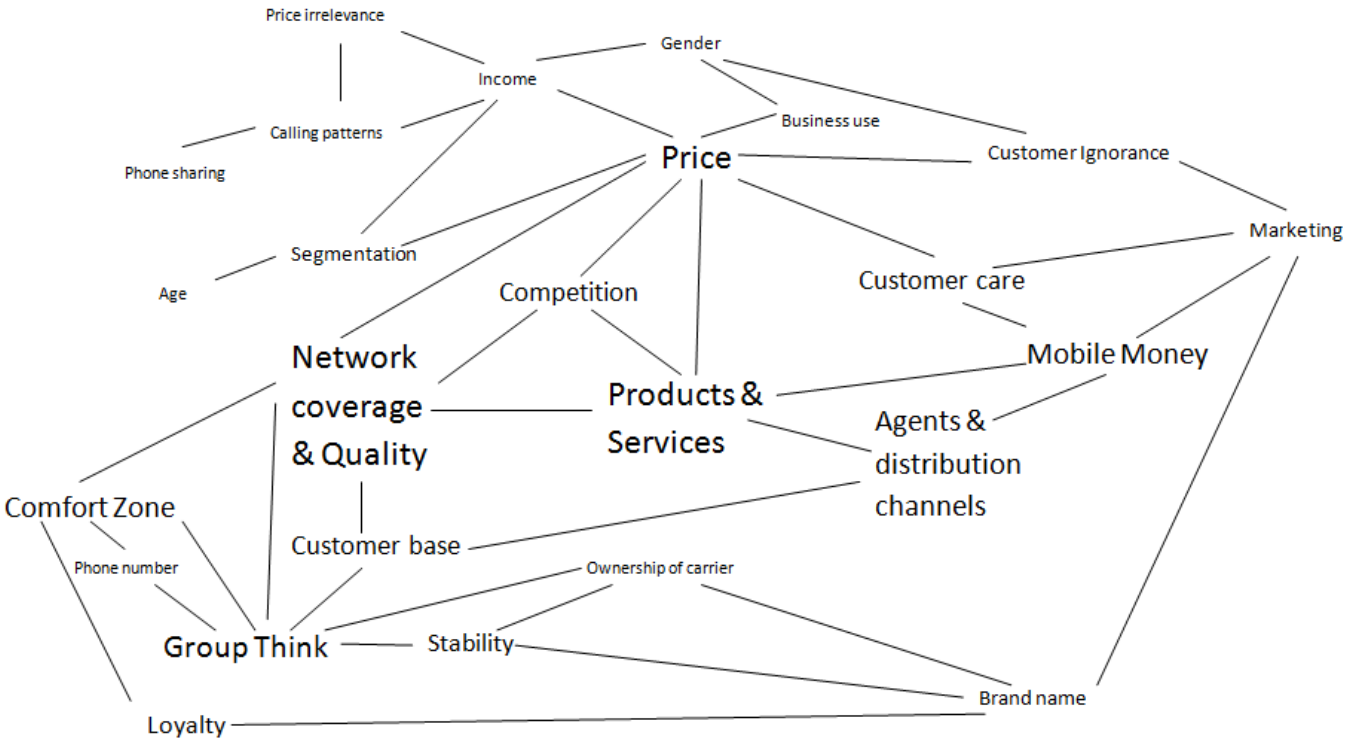

Figure3. Causes of churn from all perspectives and their interlinks

Because Safaricom was an incumbent carrier, it had an upper advantage due to its large customer base. Thus, Safaricom manager also showed more confidence because of their sticky products. Both Safaricom and Airtel found pride in providing a wider variety of products, better network coverage, and higher stability. The newer entrants defined their value as being more affordable.

Despite the communication authority's rules that mandated registering personal information for every customer; demographic segmentation of customers is only based on the age of customers which is insufficient. Safaricom, Airtel, and Orange, segment

customers based on their spending mainly concentrating on business customers. YuMobile segments customers by age, targeting youth and university students.

Carriers' answers were entered and analyzed using Nvivo10. The responses produced 22 different categories. Some categories ranked equally. The top 11 categories were referenced by all the four carriers and ranked as follows;

a) Rank 1; products
b) Rank 2; (i) price, and (ii) customer care
c) Rank 3; marketing
d) Rank 4; (i) customer segmentation, and (ii) brand name and loyalty
e) Rank 5; (i) promotions, and (ii) network quality.
f) Rank 6; (i) network coverage and distribution channels, (ii) competitors, and (iii) call plans and tariffs.

Word frequency analysis ranked the causes differently as per the following order; (a) customers, (b) services, (c) network, (d) products, (e) coverage, (f) competitors, (g) price, then (h) promotions. In both cases, the analysis showed that the causes of churn from the perspective of all four carriers had more to do with the carrier itself and not to the customers. Although the ranking of categories differed, the categories identified from both analysis remained the same.

The difference between the four carriers differed in the way they define valuable customers. Safaricom considered those who spend more money as valuable customers. Airtel and Orange consider customers who use them as their primary network as their preference. YuMobile considered customers who use the network 100% of the time as more valuable.

As reported by the managers, complaining customers ranged from 11% for Airtel and Orange, 20% for Safaricom, 40% for YuMobile. However, customer analysis shows that 100% of Safaricom's pre-paid customers complained about long queues. Social media analysis also showed mostly happy Orange customers, yet statistics showed a significant drop in customer base. Airtel customer analysis showed mixed feelings about the network and much ignorance of the services.

Proposed solutions by carriers to solve the problem of churn also varied greatly.

- YuMobile suggested; (a) better coverage, and (b) wider distribution channels.
- Airtel suggested; (a) increasing distribution, (b) improving network quality, (c) customizing products, and (d) reviewing customer complaints.
- Orange suggested, (a) paying attention to existing customers, (b) implement loyalty programs, (c) upgrade customer service, (d) monitoring customer behaviors, and (e) improving network coverage.
- Safaricom suggested; doing customer surveys, increasing product range, and offering more value to high-value clients.

The one thing that all four carriers agreed upon when choosing from customized answers was that they needed to improve the quality of the network and coverage. Other options that followed were increasing brand awareness followed by improving technology and adding services. From the above data, carriers considered price as a secondary factor in solving the problem of churn. Carriers wanted to present value to their customers through network advancement, continuous innovative products, and better customer care.

Table 11

Causes of churn from customers' perspectives

Carrier related causes	*References*	*Customer related causes*	*References*
Price	122	Comfort zone	56
Network coverage and quality	89	Group think	50
Mobile money	71	Customer's ignorance	50
Customer support	44	Price irrelevance	38
Services	39	Phone number	29
Marketing	31	Business vs. personal	28
incumbency and stability of the carrier	31	Loyalty	27
distribution channels (agents)	29	Customer's knowledge	25
M-Shwari (savings services)	11	Income	17
Reliability	10	Irrelevant marketing	16
Credit services	7	Type of phone	15
Cost of receiving calls	4		
Corporate social responsibility	3		
Total	491		351

Customer perspective

Although carriers considered the services and network advancement before price; nevertheless, customers referenced price 30% more than network and services as seen in Table 11. About 15.4% of participants were unconditionally willing to churn using MNP, but more importantly, 34.6% of customers were willing to churn because of price. Again

although 31% of participants were not willing to churn, out of these participants 25% considered price as one of their major concerns. Thus, underestimating the value of price reduction for customers is certainly a mistake.

Network coverage and quality ranked next to price with 89 references. Despite the stronger coverage of Safaricom to all major towns and populated areas, participants who complained about Safaricom's network were double those of Airtel which is understandably due to the congestion caused by the larger customer base. Orange and YuMobile faced rejection from 92% of participants mainly due to the unavailability of their distribution channels and agents and poor or slow network. Coming second to price, 27% of participants reported their willingness to churn if the network coverage was not sufficiently available or if the quality was not as they expected.

Mobile money services came third on the list of customer expectations with 71 references. Safaricom's M-Pesa is indeed a very sticky product as Safaricom's manager had mentioned, with 31% of Safaricom's customers refusing to churn because of M-Pesa services. Nevertheless, 19.2% of participants were willing to churn if they found similar mobile money services and a similar wide distribution network with other carriers.

Despite that price, network coverage, and mobile money services heading the reasons for churning customers as also reported in literature research (Ginn et al., 2010) there were many behavioral and economic factors that participants declared as important factors that would make them consider switching their service provider. Factors such as; comfort zone, group think, ignorance of products, price irrelevance, stability of the carrier, holding on to the phone number, and even the type of phone used, made a significant difference to customers. Such issues were never considered by carriers and

were never mentioned by the managers in the interviews although these factors totaled to 41.6% of the causes of churn as shown in Table 11. The attention of telecommunication leaders to these issues could result in high customer retention and preventing a great percentage of customers from churning.

Causes of Churn

The three sub-questions used in this research aimed at answering the behavioral factors, the economic factors, and the policies causing churn. This subdivision of the main research question into smaller, manageable questions assisted in finding all possible causes of churn from the different perspectives. The choice of these three categories came as a result of extensive literature research and reported causes in previous studies.

Behavioral causes of churn. Dasgupta et al. (2008) reported that churn depends on the relationships of an individual with churners, but more significantly, on the interconnectivity attributes of the relationships in a social network setting. The use of qualitative research was indeed very useful in identifying many of the patterns causing churn especially when it came to behavioral patterns.

Demographics showed that the female participants had higher education levels, but slightly lower income levels. Unemployment rates in the sample chosen were equal in both genders. Although there was no relationship found between gender and willingness to churn, the average female spending on phone usage was found to be approximately 60% that of males. Females also showed slightly higher knowledge of the products and services. In other words, telecommunication leaders should note that males have less knowledge of their services but spend more on phone usage. Although previous literature had also reported that the usage was similar between genders in East Africa and that the

only influencing factors were education and income (Milek, Stork, & Gillwald, 2011); nevertheless, further research is required to investigate the reasons why the male population spends more.

Social status analysis revealed that 69% of participants call more when they are in a relationship and call less if they are single or if they are married. This is consistent with research by Wong (2011a) but contradictory to Oghojafor et al. (2012). Results also showed that 60% of married participants call less after they were married. This indicated the importance of segmenting customers based on their social status.

Group think was the top most customer related cause of churn. Some literature calls this *club* effect and is reported to have direct links to loyalty and customer retention (Jurisic & Azevedo, 2010). Like many African nations, Kenyan customers are socially active and value the opinions of their spouses, family, friends, colleagues, co-workers, customers, and community members. People do not like to be left out of the crowd as CI28 stated. YuMobile took advantage of group think and targeted the youth and university students and managed to collect three million subscribers in five years despite the stiff competition from eight-year older carriers in the market.

The stability of the carrier generated comfort zones that in turn caused some sort of forced loyalty. Participants showed reluctance to join new carriers due to their instability. Also, the change of ownership of Airtel and Orange made participants hesitant when it came to moving from Safaricom.

Loyalty was another cause of churn (Veloutsou & Moutinho, 2009), but unlike what carriers may think, loyalty was not created by their loyalty reward programs. Only 19% of the participants found value in reward programs. Staying in the comfort zone for

too long appeared to be the main reason for loyalty. Heritage associated with Safaricom's stable local presence and introducing the company into public stock allowing customers to own shares increased customer's loyalty with Safaricom.

The phone number also had some impact in preventing people from churning, with 38.5% of participants refusing to churn for fear of losing their number. Mobile Number Portability (MNP) has an insignificant effect because it lacked proper marketing and communication and because customers who use MNP will end up losing the services offered by their old carrier. The importance of the number together with the introduction of dual SIM phones, and the flexibility of choosing a similar number from other carrier, has resulted in 70% of the participants actively using more than one SIM card simultaneously.

Similar to findings of Sey (2009), phone sharing in families was found to be common even in urban Nairobi, where 50% of the participants reported sharing their phones with family members. Reports also showed that customers only share phones when the airtime of one member is exhausted, but all family members have their personal phones.

Ignorance of the products and services is a major problem that can cause customers to be unhappy and unsatisfied with the carrier. An astonishing 88.5% of participants had no idea which tariff they were using. Moreover, 100% of the participants were not aware of the wide variety of services their carriers offer. Marketing by carriers was also not very effective in educating customers especially that customers felt they were receiving irrelevant text messages from the carrier trying to market unwanted

services. Educating customers on how to save cost would be a remarkable way to market the brand and retain price-conscious customers.

Economic causes. The economic causes were an influence of both customers and carriers and reflected in the following possible cause;

Income had a direct influence on the amount of money spent on mobile usage as also reported by Wong (2011a). In the lower income group that earned from 0- Ksh 6,000, 56% were using their minimum spending to cope with their low income. This group had an average spending of Ksh 1,500 per month. The two higher earning groups combined (those that earned from Ksh 6,001-40,000 and Ksh 40,001-Ksh 100,000) used an average of Ksh 3,000. However, 41% of the participants in these two groups were using their maximum mobile usage and 33% with stable usage. This indicated that marketing to this group might not be effective in earning carriers more money. Finally, the group earning above Ksh 100,000 spent an average of Ksh 5,700 with 80% of the participants in that earning group having stable usage that was not affected by the variance of their income. Only 15.4% of the overall participants had variable calling patterns based on their varying income.

Irrelevance of price was a rather odd factor to be a cause for not churning. Furthermore, none of the previous research reported it to be a cause of customer retention. Participants showed no willingness to churn because the price difference was too small for them to consider moving to another carrier especially after the cost of one minute went to as low as two shillings. Every participant who could afford to buy a dual SIM phone opted to use multiple SIM cards to make use of cheaper offers provided by carriers rather than throwing any of the old lines they have been using. This provides

comfort to incumbent carriers but also an opportunity for all the new carriers if they can afford to keep their offers running long enough to gain a reasonable market share and move customers to a comfort zone.

Pre-paid business lines turned out to be used for business more than post-paid lines with 57% of the pre-paid customers having dedicated lines for business usage. Despite carriers focusing their full attention on post-paid customers; the analysis showed that out of the 19.2% that used post-paid lines, 40% were using them because post-paid had cheaper bundles than pre-paid. Therefore, they were able to reduce their cost by more than half what they would spent if they were on pre-paid. The analysis also showed that Safaricom customers spent about four times more on their business lines compared to their personal lines, whereas Airtel customers spent a maximum of double the amount on their business lines. This acts as a cautioning note to carriers to reconsider their business customers. They also need to understand that a pre-paid customer spending up to Ksh 6,000 deserves much more attention than the post-paid customer that is paying a fixed Ksh 1,000 on a 1,000 minute post-paid bundle.

The cost of receiving calls is an interlinked cause with group think as explained in the behavioral causes above. Customers have expressed their concern about the cost that their family members and friends would incur if they were using a different network as the off-net calls are more expensive, especially from Safaricom to other networks. This is a new contribution to the body of knowledge on churn as previous literature never mentioned cost of receiving calls as a cause of churn.

Marketing campaigns have resulted in customers virtually drowning in tons of promotions, not able to know what to choose, and in some cases preferring to ignore

completely all marketing offers altogether. Similar to reports by Cătoiu & Gârdan (2010), customers did explain their disappointment from the multiple marketing messages they receive. About 38.5% considered the marketing text messages as junk and deleted them without attempting to read the content. However, 35% customers recommend audio-visual commercials, and 11.5% preferred direct approach through face-to-face interaction to be more appealing.

Customers felt more value when they received bonus offers that did not require them to subscribe to any promotions. Participants were concerned with subscriptions feeling that there were always hidden charges that get deducted from them without their knowledge. Customers often complained about automatic renewals of such subscriptions and many sought customer support assistance to unsubscribe. Participants indicated that rewarding long talkers with free airtime and doubling the value of the bundles when purchased without the need for subscriptions were much more appreciated than trying to convince them to subscribe to cheaper tariffs or offers.

Policies and regulations causing churn. As much as the previous section expressed the causes of churn from customers' actions and behaviors, according to the analysis, 58.3% of the causes were indeed caused by carriers and their policies.

Communication Authority of Kenya (CA) had a great effect on the telecommunication industry as a whole by mandating SIM card registration that has provided carriers with sufficient personal information about their customers. CA has also reduced the termination charges although this has only affected the off-net call rates. However, it has tremendously improved competition in the market because customers of new carriers can now make cheap calls to incumbent carriers.

Mobile Number Portability regulations that were introduced by CA have not seen much publicity. Customer awareness of this service remains at 7.7% only. Moreover, participants reported that they would still not use MNP because of losing the services of their old carrier if they churned using MNP.

Market segmentation is an important yet much-ignored factor by carriers. Whereas all the carriers target business and post-paid clients for their higher spending and consider them more valuable clients, newer entrants concentrated on niche youth market. Still much needs to be done in terms of proper market segmentation and positioning.

The number of customers each center or agent serves showed a direct relationship to the quality of customer support. Generally, higher customer per agent ratio resulted in longer queue thus more complaining customers. All participants complained about the long queues both physically and waiting on the phone for an agent to assist them solve their issues. Whereas 92% of the complaints were about network quality, mobile money related problems held the second position in the number of complaints.

Customers complained about their long queues at customer centers and delay in getting an agent to answer their phone calls when they faced a problem. Moreover, customers also complained about paying higher prices. Nevertheless, it was reported that 60% of the participants would rather remain with incumbent carriers despite the higher prices and poor customer service, just because of their wider network coverage, availability, and accessibility of their distribution channels. Thus, customers would tolerate higher prices and inconvenience of waiting in exchange for the wide availability and spread of distribution network of their carrier. This denoted the great importance of

distribution channels and ability to find a nearby agent and its effect on customer retention.

Innovative products are what made Safaricom prosper in the Kenyan market, being the leader of M-Pesa the popular mobile money service. Innovation has become a trend with incumbent carriers to enable them to retain old customers and attract new ones and at the same time generate more revenue from price-sensitive customers. It is worth noting that up to 40% of clients, as reported by Airtel manager, are uneducated enough to use Value Added Services (VAS).

As much as innovative products are essential for the continuous growth of carriers in an already saturated market, the number of products must be controlled. Customer analysis presented an important fact that carriers need to take into consideration when bombarding the market with an enormous amount of services and products. Only 23% of the participants were aware of their tariff on Safaricom simply because it is only one tariff, but none of the customers of the other carriers had any idea of their tariff. Customers were unaware of the promotions they were subscribed to, they were not even aware that the services mentioned even existed. This calls for refining the number of services and products to those that are effective and relevant to customers.

Ignorance of customers is somehow affected by the enormous amounts of services that are provided by the carriers, resulting in customers refusing or failing to choose any. But more importantly there is persistence from customers to ignore text messages that had become an annoying way for carriers to advertise their products. Customers prefer getting bonus benefits as an attraction point, but they also like to hear musical radio commercial and watch lively TV commercials that would often attract customers'

attention. Moreover, many participants have indicated their preference for direct interaction and door-to-door marketing as a more personalized way of grabbing their attention and educating them on new products.

Finally, network advancement, and quality of service are continuously reported problems by customers. Findings by Reichheld and Sasser (1990) and Myron (2004) had emphasized the importance of quality of service. Lack of network coverage, dropped calls, weak signal, and busy network were enough causes for 7% of the participants to swap completely their old carrier. Moreover, another 34.6% of participants were willing to churn if they found similar problems with their current carrier or found a carrier with better network. Thus, it can be considered that network quality and availability, coupled with wide distribution channels, and acceptable customer service would convince even price-conscious customers to pay slightly higher premiums for getting consistently reliable services.

Recommendation for Carriers

The findings and analysis section above discussed some of the major problems and causes of churn in the telecommunication industry. As much as management solutions are never standard or simple but often interlinked with many factors affecting the running of the organization as a whole, the next section presents a set of simple recommendations that leaders can use.

A model representing the steps taken to investigate customer retention problems is presented (Figure 4). Managers and leaders can use this model for future investigation of similar problems and could be useful to any field and industry. Investigating the problem from one perspective and attempting to measure variables using quantitative research

without the solid understanding of the problem and its causes first is a serious mistake. This model should assist in directing leaders to the proper method of realizing the true dimensions of similar problems that they might need to investigate. It is necessary to cover all aspects of a problem before rushing into marketing campaigns that will just waste time and money without any real benefit.

General Recommendations

These are recommendations for all the four carriers in general that telecommunication managers and leaders should consider before taking churn related decisions and policies. They are particularly useful for upper management and leaders to take appropriate decisions and directive visions, but also useful for departmental managers when devising their strategies.

Price is as important to customers as the service the carrier is providing. Price enabled a new carrier to gather three million subscribers in a very saturated market within a short period. Participants referenced price 30% more times than any other cause of churn. The only way to avoid price competition and demand higher premiums is by providing the following three services simultaneously; (a) wide network coverage with good quality, (b) distribution channels and agents within reach of every client, and (c) mobile money services.

Another alternative to price reduction would be to target a specific niche market. There is still much potential in segmenting the population that needs exploration, such as targeting customers who are in a relationship and shown to be spending more on phone usage. Also targeting pre-paid business lines that have not received sufficient attention

despite their importance. The male population was seen to be spending more yet is less educated. Carriers should find a way to target that group in a simple manner.

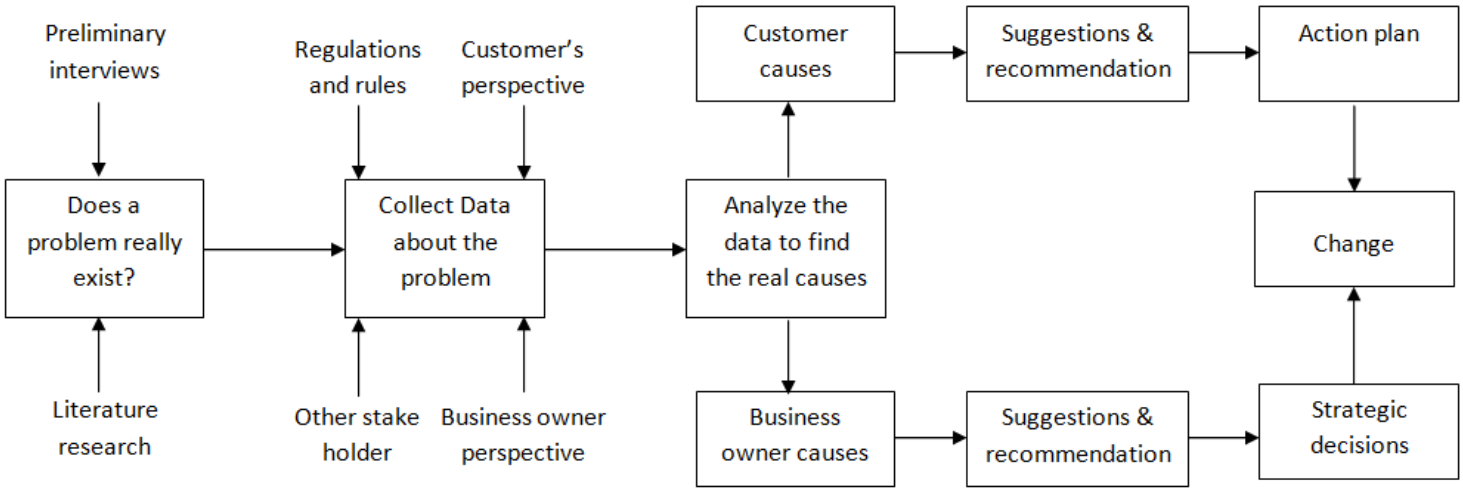

Figure 4. Model used to investigate and solve the problem of churn

Concentrating on specific products can also be considered a good strategy, such as concentrating on mobile money services or just internet. For example, Orange succeeded in defining itself as a reliable and affordable internet provider. It should have concentrated on that rather than targeting the mass market.

Group think is an underestimated cause for churn yet it ranks the highest amongst customer causes for churn. The more people join the carrier, the more other people will want to join the same carrier, no one wants to feel alone. Targeting university campuses, large organizations, congregations in religious institutions, political rallies, and close communities could be a way of achieving great numbers of customers even if they are not profitable in the beginning.

If new entrants want to attract customers, and if they want customers to believe them, they need to advertise that they are coming into the market permanently. They

should find a way of convincing customers that they are not going to follow suit of all three carriers that have not been able to sustain their existence and kept selling to others. Associate their brand with Kenyan heritage rather than being associated with international investors and global branding.

Get rid of complications by avoiding multiple tariffs that customers are unaware of and do not use. Reduce the number of services that do not reach a certain percentage of customer usage and instead try innovating new products that would appeal to customers. Be consistent in promoting one product or service at a time instead of confusing customers with the many offers, promotions, and services.

Marketing must be targeted, nobody likes spam. Carriers should stop sending continuous annoying messages when they now know that customers do not read them. Try sending a message to a client using his/her name and introducing a service that meets their profile after studying the usage pattern and demographics properly. Try using tribal languages to market products rather than the use of English and Kiswahili. Indeed, this will take an enormous amount of effort and cost to do but it would probably result in happier, more loyal, and even more paying customers.

Radio and TV adverts appeal to the mass market. Customers who do not have time to watch TV usually listen to the radio while in their vehicles. Again, localizing the radio adverts to tribal languages according to the region with local radio stations would have a remarkable effect. Also carriers should make more use of social media and internet advertisements, the new generations are all being brought up on the Internet and the average age in Kenya is quite low causing new generations to replace the current workforce quite quickly.

If carriers want to please their customers, they need to give them simple, direct gifts such as 50% more data when they load their bundle or 100% airtime when they top up using mobile money. Participants who were requested to subscribe to certain services by dialling a certain number felt less reluctant to do so and sometimes even worried about hidden charges which prevented them from subscribing. If commitments and subscriptions are necessary, then carriers should make the service only renewable upon confirmation with the client. A simple text message at the expiry period asking the customers to dial one for renewing the service or zero for unsubscribing would be sufficient to make the customers feel valuable and not robbed of their money.

Forget about MNP and move on. Customers will not throw away any carrier, they will just revive the SIM card with the better promotion and with multiple SIM phones increasing, the possibility of customers using MNP is going to reduce even further.

Fifty percent of participants shared their phones with family members at home. Why not make a family plan to share the airtime with family members instead of sharing the phone itself? This way the carrier can also guarantee that the rest of the family are also using the same network.

Carrier Specific Recommendations

Because each carrier is unique and has special features not found in others, a special dedicated section was also personalized for each carrier in appreciation to their support in this research.

Safaricom. Keep up the good work and flexibility in management strategies to cope up with the changing environment. This is what Safaricom succeeded in creating while other carriers could not; (1) Safaricom was cheaper when Kencell was the only

competitor with higher prices, making Safaricom the better option; (2) Safaricom was consistently stable whereas Telekom Kenya was selling to Orange, Kencell to Zain and Zain sold to Celtel, then Celtel to Airtel, then the recent splitting of YuMobile to Safaricom and Airtel; (3) Safaricom was the faster and most reliable network with stable connectivity and good quality of network when YuMobile was offering totally free calls and Orange offering unlimited data bundles; finally, (4) Safaricom was the introducer of innovative products such as M-Pesa that has become a reason for further loyalty and confidence.

Safaricom the incumbent carrier viewed churn as a minor problem because it affects its 87% of their lower value customers. Despite that 13% of Safaricom's customers generate 80% of their revenue, Safaricom does not realize that one of the main reason these 13% are using Safaricom is because the other 87% are using their network. In other words, if Safaricom was to lose its 87% of customers who are considered negligible, it will automatically lose the 13% of valuable customers because of group think. Thus, Safaricom must remain competitive enough to attract the mass market in order to retain its valuable customers.

Finally, beware when costing your products. Post-paid customers using the Ksh 1,000 plan are not more profitable than the pre-paid customers that spend Ksh4,000, yet the former are given much more attention because they are on post-paid subscription.

Airtel/YuMobile. Airtel is, in fact, the carrier with the largest amount of services, especially when combining the one-network products to their list. However, Airtel must reduce the unnecessary services that are crowding its system and focus on extensively promoting unique services. For example Airtel is the only carrier providing Islamic

portals; however, an approach towards mosques and Islamic gathering locations needs to take place for people to use such services.

Airtel should not keep its new customers in the dark and leave them thinking that YuMobile is still active. Make your customers aware and be proud that they have joined a bigger and more established network and congratulate them that they have now become a member of a family of more than seven million subscribers combined.

Airtel should keep the cheap offers and services that made customers subscribe to YuMobile active, but integrate them instead of just adding more services to the list of already huge services. A similar scenario had already occurred in Uganda when Airtel acquired Warid Telecom. The integration created a new product called corporate mega bonus that kept running after the merge and proved to be a leader in that market.

Finally, the only way forward is to increase the number of Airtel money agents and availability of airtime/scratch-cards in every junction on the street. Any attempt to delay this expansion will be seen as reluctance to provide Airtel customers with the essential wide distribution network that they are willing to pay a premium to get.

Orange. Orange had inherited a WCDMA network, landlines, and pay phones, yet they did not fully utilize this massive infrastructure. A whole new vision needs to be deployed to cope with the declining customer. Options could be;

a) To do away with old technologies such as CDMA and copper land lines completely and concentrate on GSM, Internet, and lease lines.

b) The triple-play (Internet, landline, and TV) was an innovative idea, which was successfully implemented by Zuku® although initially introduced by Orange. Still there is a good opportunity for reviving and concentrating on that sector.

c) Maintaining copper landlines is an expensive practice. It is better to invest in an optical-fiber network and lease it out to virtual networks and new market entrants.

d) Make use of your dormant VOIP services by familiarizing your customers who make frequent International calls.

e) Finally, continue advertising and become more visible to the public. People forget service providers quite quickly, and several participants had commented on not visualizing Orange adverts anywhere in their local area.

Study Limitations

The most important limitation in studying the telecommunication industry is the factor of time. The speed at which the telecommunication industry is moving makes research obsolete in a very short time.

The study was also geographically constrained to Nairobi, the capital city of Kenya. Nairobi is a city with slightly over three million people, where about 80% live in semi-rural settings in slums and congested settlements with poor living conditions. Conditions in other cities and villages may differ and thus the study may not represent the wider geographical scope of Kenya. Conditions in other cities and villages may differ and thus the study may not represent the wider geographical scope of Kenya.

The study was conducted on English speaking Kenyans only, no foreigners or non-English speaking Kenyans participated. This could compose a certain portion of the population that was uninvestigated and could have an effect on churn. More than 60% of the population have completed high school education, which is in English, with only an average of 2% uneducated or illiterate people (KNBS & MLE, 2011). Although a greater

percentage of the uneducated people live in villages which were not in the geographical scope of this research; however, this means that further broader research to include Non-English speaking citizens and other towns and villages is required. Also, prisoners and people aged below 18 years did not participate in this research despite the latter being active users, especially with the rising smart phone technology. Finally, data collected did not include the business sections of carriers' websites as the concentration of this research was mostly on the individual customers.

Recommendation for future research

Qualitative methods are theory generating methods that provide ample room for future quantitative research to prove or disprove the findings (Yin, 2009). A case study will generate particular information about a certain case and generalizing it beyond that specific case may require taking into consideration other factors that might not have been applicable in this case study. This provides plenty of room for future research on other similar cases. Other researchers may wish to investigate other countries and cultures to justify the results of this research.

Furthermore, quantitative research on the same topic will prove very useful in identifying the correlation between the identified causes. Quantitative research would also help in determining the correlations and percentages of each cause and provide a prediction pattern of churning customers. In this research, concentration was on individual use rather than business use. However, results showed that there is a considerable amount of pre-paid business customers. Further research reflecting more on both pre-paid and post-paid business customers might add value to operators as they seek to please their more valuable customers. This research also investigated the services that customers mostly use such as mobile money and credit facilities. However, there were

many other services that were not investigated in-depth such as the emergency services provided by operators which may be of great importance to customers. The reasons for not including these issues is that customers were either not aware of such services or never mentioned them during the interviews. Further quantitative research can investigate the services that each operator provides individually, and find correlations between different services.

This research may also need to be followed by another explanatory research to investigate the possible causes of some findings. The reason why males spend more than females was an interesting finding that requires further investigation. Quantitative data along with the findings of this research can be used to create customized churn prediction software that is accurate and customized to the greatest extent to the carriers in Kenya and highly applicable to carriers in the East Africa region.

This study could be easily replicated in the East African countries because they mainly have similar settings but cannot be extended further than these five countries (Kenya, Tanzania, Uganda, Rwanda, and Burundi) as the culture and regulations tend to differ in greater proportions

Summary

This explorative case study research investigated the causes of churn in the telecommunication industry in Kenya using a method that no previous research had used. The in-depth investigation of the problem was essential and a necessary first step to take before making any assumptions . The main question of this research was split into three sub-questions. The first sub-question investigated the behavioral patterns of customers causing churn. The second sub-question investigated the economic patterns causing

churn, and the third sub-question investigated the policies and regulations that cause churn.

Findings of this research were to a great extent similar to all previous literature, with the exception of one research. Most previous research found relevance between the tested causes and churn; however, findings also indicated that it is rather misleading to investigate a single cause in isolation as the results would show that there is always a direct connection between the investigated cause and churn. The analysis showed that the causes of churn were also viewed differently by the carriers and the customers. This mandates that leaders must first identify the true causes of any problem from all the different perspectives before attempting to solve the problem. Different causes would definitely require different actions and with the wrong causes in mind the solution would not provide the required results.

The findings showed that the top three causes of churn are price, network coverage and quality, and products and services. Other major causes were group think, mobile money, the wide distribution of agents and customer service, and customers staying in their comfort zone. There are many other medium to minor causes, however the true effect of the problem of churn only appeared when all the causes were interlinked showing that one cause could easily lead to the other making the problem much more complicated than it might seem. Another important conclusion is that 41.6% of the causes of churn were caused by customer related issues such as behavioral and economic patterns whereas 58.4% of the causes are related to the carriers' policies such as network, products, pricing, and promotions.

General recommendations for carriers in Kenya include paying attention to price. The only way to avoid price wars is by providing good network coverage and quality, wide distribution network of agents, and introduce sticky services such as mobile money services. Carriers may also seek a specific niche market either by targeting a certain population segment or concentrating on a specific range of products. On the other hand, underestimating the value of behavioral causes such as group think, loyalty, phone sharing, and heritage is a big mistake. New entrants should attempt to attract as many customers as possible even if they were not profitable in the beginning to initiate a group think of their own. At the same time, foreign carrier must find a way to appeal to the Kenyan people through heritage and without the extensive use of annoying text messages. Carriers should also apply targeted marketing rather than spam. Services promoted should be simple and useful without adding complicated subscription procedures. It is most effective to use Radio and Television together with personal direct marketing. Moreover, customers reported to value unconditional free bonuses rather than subscribing to services that would drain their money by renewing their subscriptions unwillingly.

For future research, there is still a lot of opportunity for utilization of the findings of this research. First, quantitative research would be very useful in identifying the extent to which the causes identified in this research affect churn using statistical analysis. Then the causes and their relationships could be used to create a customized churn prediction software that will not be based on statistical data warehouses gathered from the carrier but based on accurate causes defined by the customers themselves.

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Appendix A

Pilot interviews/ customer interviews

The aim of this interview is to understand the problem of churn in the telecommunication industry from the point of view of the customer and what causes them to churn.

Screening question

Qa: Do you use more than one SIM card? Which operators do you use?

Qb: what is your age? (If less than 18 years old cancel the interview)

If yes and over 18 respectively then please answer the following:

Demographic questions

Q1: Gender: M/F

Q2: In which part of Nairobi do you live?

Q3: Please rank yourself among the following income groups:

a- Earn 0- Ksh 6,000 per month (Ksh 6000 is the minimum salary declared by the government and is equivalent to $70)

b- Earn Ksh 6001-40,000 per month

c- Earn Ksh 40,001- 100,000 per month

d- Earn over Ksh 100,000 per month

Q4: Do you have a family/married/or in a relationship?

Q5: What is your education level?

Q6: What is your employment status and occupation? (if unemployed, skip Q13)

Questionnaire

Q7: Why do you carry more than one SIM cards?

Q8: Which line do you use more often and why?

Q9: a) Are you on post-paid or pre-paid subscription plan?

b) Which tariff are you subscribed to?

c) What is your average usage for each operator/carrier (price/month)?

d) Which network services and bundles do you use on each network?

e) What promotions do you subscribe to?

Q10: Being an (urban/rural) resident, how does your usage differ when in the city or village?

Q11: How does your income affect your calling patterns?

Q12: How does your marital status/ relationship affect your calling patterns?

Q13: How many of your friends/family use your preferred operator (an average/estimate number) if some of your friends would decide to change to a different operator would you also consider changing?

Q14a: (If you are employed, or own a business) Do you use a separate phone for work? If yes, do you have the choice of choosing the operator? If you were given the chance to choose would you chose your preferred operator? Do you use your personal phone for work?

Q14b: (If you are a student) How can you define the influence of your colleagues on your choice of the operator and calling patterns?

Q15: Is the price a major concern or are there other concerns you would consider when using a certain operator? What are these concerns?

Q16: If a new operator provides a cheaper tariff or a promotion will you consider buying their SIM as well? What kind of offer would you consider?

Q17: Have you ever contacted customer support? What do you think of their service? How does this affect your calling patterns?

Q18: Does the quality of network (network services, *excluding customer support services*, for example, the signal strength, sound quality, the connectivity, and the call-drop rates) make you consider changing the service provider? Why?

Q19: Number portability has been introduced in Kenya. How does this affect your decision in changing the operator?

Q20: Do you share your phone with someone else? How does this work?

Q21: Does your calling patterns differ during the day or year around? (for example, do you make less calls in the morning or during vacations), please explain the pattern?

Q22: Do you use roaming services? How do you plan your phone usage before/when traveling?

Q23: How often do you change your tariff/calling plan? Which tariff would you consider the best? Why?

Q24: Would you prefer to make your own customized calling plan/ bundle? If yes, what bundles would you choose?

Q25: How do you measure the value of the service provided by the operator?

Q26: Why would you consider switching to another operator?

Q27: What other factors do you think would support your decision?

Q28: What action if done by the operator would let you re-consider your decision?

Q29: How does the brand and marketing affect your decision of changing your operator?

Appendix B

Interview with managers from different carriers

The aim of this interview is to understand the problem from the point of view of the carrier and how they define and react towards the problem of churn. These interviews are meant to complement the secondary data collected from public websites and published information and reports on the carriers' websites and the regulator.

Q1: How do you define yourselves in terms of value to customer?

Q2: Do you concentrate on a specific niche, or on the wider market? Why?

Q3: How does the problem of churn affect your company?

Q4: What are the causes of churn in your opinion?

Q5: What are the steps taken to solve the problem?

Q6: What is done to prevent the problem?

Q7: Are you using churn prediction software? If yes, how accurate is it in determining the probability of customers churning?

Q8: How would you define valuable customers? Would you consider neglecting a customer with a high probability of churn if they do not add much value to you?

Q9: On what basis do you plan your promotion plans?

Q10: On what basis do you plan your marketing campaigns?

Q11: How do competitors' actions affect your decisions?

Q12: How often do you get complaints from your customers? What are the most common complaints?

Q13: How does the Communication Authority of Kenya (CA) regulations affect churn in your opinions?

Q14: Was number portability a good idea? How did number portability affect your customers?

Q15: If you were to make a special offer to your customers, which of the following would you consider (if more than one option then please rank them in order of importance)

a- Improve the technology and adding newer services

b- Improve quality of network and coverage

c- Reducing the price or making a special calling plan

d- Increase brand awareness through advertisements or other marketing methods

e- Enhance customer support centers.

Q16: What other options would you consider providing to your customers?

Q17: How do you think these options will affect churn?

Appendix C

Informed consent for pilot and direct customer interviews

My name is Joseph Halim and I am a student at the University of Phoenix working on a doctorate degree. This is not to advertise any product to you nor to ask for any money. I am doing a research study on the causes of churn in the telecommunication industry. The purpose of the research study is to identify the possible causes of customers switching to different mobile operators

Any Kenyan adult in Nairobi who is freely willing to participate in this dissertation is a qualified candidate. Your participation will involve answering a few questions that will take approximately one hour. Your interview will be audio recorded using this smart phone. You can decide to be a part of this dissertation or not. Once you start, you can withdraw from the study at any time without any penalty. The results of the research study may be published but your identity will remain confidential and your name will not be made known to any party. All audio recordings will be securely kept in password protected files in the researcher's personal custody.

In this research, there are no foreseeable risks to you.

If you have any questions about the research study or decide to withdraw at any later date, please contact me at joehalim23@hotmail.com or on my phone number.

As a participant in this dissertation, you should understand the following:

1. You may decide not to be part of this dissertation or you may want to withdraw from the study at any time. If you want to withdraw, you can do so without any problems.
2. You are not required to provide us with your identity or any personal information.
3. Joseph Halim, the researcher, has fully explained the nature of the research study and has answered all of your questions and concerns.
4. If interviews are done, they will be recorded. If they are recorded, you must give permission for the researcher, Joseph Halim to record the interviews. You understand that the information from the recorded interviews may be transcribed. The researcher will develop a way to code the data to assure that your name is protected.
5. Data will be kept in a password protected file. The data will be kept for three years, and then destroyed.
6. The results of this dissertation may be published.

"By agreeing to participate with us on this interview, you agree that you understand the nature of the study, the possible risks to you as a participant, and how your identity will be kept confidential. To participate with us in this interview you must be 18 years old or older and that you give your permission to volunteer as a participant in the study that is described here."

(☐) I accept the above terms. (☐) I do not accept the above terms.

Signature of the interviewee _____ Date _____

Signature of the researcher _____ Date _____

Appendix D

Informed consent for managers

My name is Joseph Halim and I am a student at the University of Phoenix working on a doctorate degree. I am doing a research study on the causes of churn in the telecommunication industry. The purpose of the research study is to identify the possible causes of customers switching to different mobile operators.

Only top level managers currently working with an operator qualify as participants in this dissertation. Your participation will involve answering a few questions that will take approximately one hour. Your interview will NOT be recorded, however notes of the answers will be written down. You can decide to be a part of this dissertation or not. Once you start, you can withdraw from the study at any time without any penalty or loss of benefits. The results of the research study may be published but your identity and the identity of the operator will remain confidential and your name will not be made known to any outside party.

In this research, there are no foreseeable risks to you. A possible benefit from your being part of this dissertation is to help the industry better understand the problem of churn so that the operators can make better informed decisions.

If you have any questions about the research study, please contact me at joehalim23@hotmail.com.

As a participant in this dissertation, you should understand the following:

1. You may decide not to be part of this dissertation or you may want to withdraw from the study at any time. If you want to withdraw, you can do so without any problems.
2. You are not required to provide us with your identity or any personal information.
3. Joseph Halim, the researcher, has fully explained the nature of the research study and has answered all of your questions and concerns.
4. If interviews are done, the information from the interviews may be transcribed. The researcher will develop a way to code the data to assure that your name is protected.
5. Data will be kept in a password protected file. The data will be kept for three years, and then destroyed.
6. The results of this dissertation may be published.

"By agreeing to participate with us on this interview, you agree that you understand the nature of the study, the possible risks to you as a participant, and how your identity will be kept confidential. To participate with us in this interview you must be 18 years old or older and that you give your permission to volunteer as a participant in the study that is described here."

(☐) I accept the above terms. (☐) I do not accept the above terms.

Signature of the interviewee _____ Date _____

Signature of the researcher _____ date _____

Appendix E

Approvals to use data from regulator and different carriers

CCK
Communications Commission of Kenya

Ref. CCK/LCS/1900

4th April 2013

Joseph Halim
C/o Adrian Group Ltd
University of Phoenix,
USA

Dear Sir,

SUBJECT: REQUEST FOR INFORMATION ACCESS

We refer to your letter dated 26th March 2013 regarding the captioned subject.

Having examined your request and particularly the kind of information you seek to obtain from the Commission for your studies, we regret to inform you that the said information is not resident with the Commission. The Commission does not require service providers (Licensees) to submit information on churn, subscriber usage or the rating of subscribers to the Commission.

We would like however to inform you that the information may be obtained directly from the service providers and that the Commission has no objection to you approaching any of the providers of public services for such information for the purpose you have stated (educational).

Consequently, the Commission would like to advise you to contact the individual licensees directly for the said information.

Yours faithfully,

Liston Kirui

FOR:DIRECTOR-GENERAL

CCK Centre, Waiyaki Way, P.O. Box 14448 Nairobi 00800, Kenya. Telephone: +254 20 4242000/ 2441081/ 2672553
Mobile: 0703 042000/ 0736 121515/ 0727 651111 Fax: 254 20 4451866
Website: www.cck.go.ke E-mail: info@cck.go.ke
Facebook: Communications Commission of Kenya Twitter: @cck_kenya

Airtel Networks Kenya Ltd.
Parkside Towers,
Mombasa Rd,

P.O. Box 73146
City Square 00200
Nairobi, Kenya.

Tel: +254 (0) 734 11 00 00
www.airtel.com

airtel

PERMISSION TO USE INFORMATION

Date: **24th May 2013**

From: Organization Name: Airtel Networks Kenya Limited.
Address: P.O. Box 73146-00200
Nairobi, Kenya.

To: Researcher Name: Joseph A. Halim

Thank you for your request for permission to use our statistical data on **"Causes of Churn in the Telecommunication Industry in Kenya"** from our website in your research study. We are willing to allow you to access, use and reproduce the above named data at no charge with the following understanding and in accordance with the following terms and conditions:

- You will use this information only for your research study and will not sell or use it with any compensated management or curriculum development activities.
- You will maintain confidentiality of the information and not disclose it to any commercial party.
- You will include the copyright statement on all copies of the instrument.
- You will send your research study and one copy of reports, articles and related publications that make use of this data promptly to our attention.

If these are acceptable terms and conditions, please indicate so by signing one copy of this letter and returning it to us.

Sincerely,
AIRTEL NETWORKS KENYA LIMITED
Organisation Name

Authorised Signature

Date: 31 May 2013

I understand these conditions and agree to abide by these terms and conditions.

Date: 31 May 2013

Joseph A. Halim

Joseph

Researcher Signature

Expected date of completion 10/27/2014

University of Phoenix®

PREMISES, RECRUITMENT AND NAME (PRN) USE PERMISSION

Name of Facility: Airtel Kenya Ltd.

Please complete the following by check marking any permissions listed here that you approve, and please provide your signature, title, date, and organizational information below. If you have any questions or concerns about this research study, please contact the University of Phoenix Institutional Review Board via email at IRB@phoenix.edu.

☑ I hereby authorize Joseph A. Halim, a student of University of Phoenix, to use the premises (facility identified below) to conduct a study entitled the causes of churn in the telecommunication industry in Kenya.

☑ I hereby authorize Joseph A. Halim, a student of University of Phoenix, to recruit subjects for participation in a conduct a study entitled the causes of churn in the telecommunication industry in Kenya.

☑ I hereby authorize Joseph A. Halim, a student of University of Phoenix, to use the name of the facility, organization, university, institution, or association identified above when publishing results from the study entitled the causes of churn in the telecommunication industry in Kenya.

Signature

Date

Name

Title

Address of Facility

P.O. Box 42964-00100

Nairobi, Kenya

airtel
Charles Wanjohi
Marketing Director
Airtel Networks Kenya Ltd

18th April, 2013

Joseph A. Halim

Doctoral Student (IRN: 9035283007)

University of Phoenix

USA

Dear Joseph,

Re: RESEARCH INFORMATION FOR DOCTORAL STUDIES

This is to confirm receipt of your request to gather information from our website – www.yu.co.ke.

Our understanding is that this information will be used solely for purposes of your studies towards achieving your Doctorate Degree.

As the information is from our public accessed website, this is to confirm that you can proceed to get this information, regarding yuMobile products and services, only for purposes of your Doctoral studies.

Best wishes with your studies.

Sincerely,

Sheila C. Maviala

Head – Brand & Communications

Essar Telecom Kenya Limited
Essar House Africa, Brookside Groove, Muguga Green Lane, Westlands.
P.O. Box 45742 - 00100 Nairobi, Kenya
www.yu.co.ke

Powered by ESSAR

Robert

University of Phoenix®

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Name of Facility: YU Kenya Ltd.

Please complete the following by check marking any permissions listed here that you approve, and please provide your signature, title, date, and organizational information below. If you have any questions or concerns about this research study, please contact the University of Phoenix Institutional Review Board via email at IRB@phoenix.edu.

☑ I hereby authorize Joseph A. Halim, a student of University of Phoenix, to use the premises (facility identified below) to conduct a study entitled the causes of churn in the telecommunication industry in Kenya.

☑ I hereby authorize Joseph A. Halim, a student of University of Phoenix, to recruit subjects for participation in a conduct a study entitled the causes of churn in the telecommunication industry in Kenya.

☑ I hereby authorize Joseph A. Halim, a student of University of Phoenix, to use the name of the facility, organization, university, institution, or association identified above when publishing results from the study entitled the causes of churn in the telecommunication industry in Kenya.

Signature

Date 27/8/13

Name Robert Githinji

Title Trade Marketing

Address of Facility

P.O. Box 45742-00100

Nairobi, Kenya

[illegible] Telecom [illegible]
RECEIV
27 AUG 2013
P. O. Box 45742 - 0010
Nairobi, Kenya

Robert Githinji
RMT
30/9/2014.

Our Ref: R&PP/Gen/07-13 16th August 2013

By Acknowledged Hand Delivery (Advance Copy By Email: jachalim@email.phoenix.edu)

Joseph A. Halim
Doctoral Student
University of Phoenix
United States of America

Dear Sir,

PERMISSION TO USE SAFARICOM INFORMATION

Thank you for your request for permission to use our statistical data on churn, available in the public domain, including but not limited to on the official website (www.safaricom.co.ke) and Safaricom published reports and other publication ("Safaricom Information"), in your research study.

We hereby allow you to access, use and reproduce the above named Safaricom Information at no charge in accordance with the following terms and conditions:

- Our consent is limited to Safaricom Information as defined, that is Safaricom statistical data on churn, available in the public domain, including but not limited to on the official website (www.safaricom.co.ke) and Safaricom published reports and other publication
- You will use the Safaricom Information only for your research study and will not sell or use it with any compensated management or curriculum development activities.
- You will not amend, revise or otherwise distort or misquote the Safaricom Information.
- You will not access, publish or otherwise use any information confidential to Safaricom and not disclose it to any commercial party.
- You will include the Safaricom copyright statement on all copies of the research instrument.
- You will send your research study and one copy of reports, articles, and related publications that make use of Safaricom Information promptly to our attention.

Please indicate your acceptance of the above terms and conditions by signing one copy of this letter and returning it to us.

Yours faithfully,
For: **SAFARICOM LIMITED**

Stephen W. Chege
Head of Regulatory & Public Policy
Corporate Affairs Division

Acceptance
I, Joseph A. Halim, have read and understood the above conditions and agree to abide by them.

Joseph 16/8/2013

Researcher Signature **Date**

Expected date of completion 10/27/2014

University of Phoenix®

PREMISES, RECRUITMENT AND NAME (PRN) USE PERMISSION

Name of Facility: Safaricom Kenya ltd.

Please complete the following by check marking any permissions listed here that you approve, and please provide your signature, title, date, and organizational information below. If you have any questions or concerns about this research study, please contact the University of Phoenix Institutional Review Board via email at IRB@phoenix.edu.

☑ I hereby authorize Joseph A. Halim, a student of University of Phoenix, to use the premises (facility identified below) to conduct a study entitled the causes of churn in the telecommunication industry in Kenya.

☑ I hereby authorize Joseph A. Halim, a student of University of Phoenix, to recruit subjects for participation in a conduct a study entitled the causes of churn in the telecommunication industry in Kenya.

☑ I hereby authorize Joseph A. Halim, a student of University of Phoenix, to use the name of the facility, organization, university, institution, or association identified above when publishing results from the study entitled the causes of churn in the telecommunication industry in Kenya.

Signature

Date 21/8/13

Name JOHN KIANJAU

Title HVC SNR MNGR

Address of Facility

P.O. Box 66827, 00800

Nairobi, Kenya

Safaricom
21 AUG 2013
CONSUMER CONFIRMATIONS
APPROVED
111 327 1272
P.O. Box 66827 - 00800, NAIROBI

Safaricom
15 AUG 2013
CONSUMER CONFIRMATIONS
APPROVED
111 327 1272
P.O. Box 66827 - 00800, NAIROBI

29/9/14

University of Phoenix®

PREMISES, RECRUITMENT AND NAME (PRN) USE PERMISSION

Name of Facility: Orange Kenya Ltd

Please complete the following by check marking any permissions listed here that you approve, and please provide your signature, title, date, and organizational information below. If you have any questions or concerns about this research study, please contact the University of Phoenix Institutional Review Board via email at IRB@phoenix.edu.

☑ I hereby authorize Joseph A. Halim, a student of University of Phoenix, to use the *premises (facility identified below) to conduct a study entitled the causes of churn in* the telecommunication industry in Kenya.

☑ I hereby authorize Joseph A. Halim, a student of University of Phoenix, to *recruit subjects for participation in a conduct a study entitled the causes of churn in the* telecommunication industry in Kenya.

☑ I hereby authorize Joseph A. Halim, a student of University of Phoenix, to use *the name of the facility, organization, university, institution, or association identified above* when publishing results from the study entitled the causes of churn in the telecommunication industry in Kenya.

Signature

Date

20/09/2014

Name

Title

Address of Facility

P.O. Box 30301-00100

Nairobi, Kenya

Telecom Plaza
Conference room.

Appendix F

Summary of carriers' websites and publications.

Carrier website	*Airtel*	*Orange*	*Safaricom*	*YuMobile*
Website copyright	2014	2011, 2012 and 2013	2014	2014
Technology used	HSPA+ (3.75G). up to 21Mb/s internet	UMTS,ISDN, landline, optical fiber,3G network with speeds up to 21.1 mbps.	3G	2G speeds 157kbps
Tariffs	*Klub254*, *Freelanga* Free tariff, *Vuka* tariff.	*Tujuane* Tariff, *Holla* Tariff, *Usinyamaze* Tariff, *WCDMA* standard tariff, *Bunda100*	*Uwezo* tariff for all pre-paid customers, and a *platinum* tariff for premium customers	*Mos Mos* Tariff (conflicting information), *Freedom 10*, *Amua* plan, *Jioni* Pack, *Karibu* Tariff
Roaming	17 countries on the Airtel One network (receiving calls free), other roaming partners available on the website	special rates with 16 countries	special rates with 6 African countries	roaming in 158 countries, no special rates
Recharging options	Scratch cards, Mobile banking transfer(4 banks), AirtelMoney, Airtime sharing, Global top-up, Airtime on credit	Scratch cards, Mobile banking Transfer, Orange Money, International top-up, NiSort (reverse call charges)	Scratch cards, ATM (7 banks), M-pesa, Airtime sharing, Indirect top-up, Airtime on credit	Scratch card, Online top up (pesa pal, visa and MasterCard), Airtime on credit
Promotions	Free-Kipedia, Internet.org, Chemsha Bongo Na Airtel, Free Twitter, Airtel Trace Music Star, Shikisha Stori Na 5X, My Airtel My Offer, Smartphone free data bundles	Facebook Zero, Jienjoy na mbao, Keep chatting, Reach the world, 4 different reward programs, Orange Uni-Zone (university special rates)	Bonyeza Ushinde, Kwachua Kredo, Ultimate upgrade, Wikipedia zero, Night shift tariff	Valentine offer, yuHoliday promotion

Carrier website	*Airtel*	*Orange*	*Safaricom*	*YuMobile*
Price comparison	*Voice:* Local rates 4ksh and 2ksh for on-net (day or night depending on the tariff) 1ksh on-net for a 10 number,	*Voice:* 2ksh for on net, 3 for off-net. with some tariffs providing free all day on-net calls for as less as ksh 10 per day	*Voice:* Local rates 4ksh and 2ksh for on-net (22h-08h).	*Voice:* on-net 6am-6pm free, rest ksh 3, (other tariffs: free on-net , ksh2 off-net).
	International: 5 countries @ ks 2, rest between ksh5-40ksh	*International* : 5 countries @ ksh2, rest between ksh 20-200, satellite 500.	*International*: ksh 5-40, remote zones 50-200ksh, satellite 500ksh.	*International* : 6 countries at ksh2 on offer, rest ksh 20-450. satellite 600-900
	SMS: on-net 1ksh,off-net 2ksh, (0.05- 0.5 ksh in bundle), 5 sms free daily,	*SMS:* ksh1 all networks with bundles @ ksh0.05, free gmail SMS,	*SMS* ksh1 all local, 10 international,	*SMS* ksh 1on-net, ksh 2off-net (bundles provide unlimited for ksh10 per day, or ksh 0.03 in other bundles).
	Internet: 8GB Ksh 4000	*Internet* :unlimited Ksh990	*Internet* : 8GB @ ksh 4000	*Internet* :Unlimited for ksh 500
Music offers	*Airtel Ngoma* (FM radio, downloads, dedications), *Airtel Hello Tunes* (ring-back tones), *Phone-orokay* (kareoke)	Orange *Hello tunes*(ring-back), customized ring-back tunes	*Skiza* (ring-back tones), *My Tunes* (downloading) *Kleek* (listening and dedicating songs)	*Dunda* (ring-back Tunes), *yuRadio* (includes DJ, dedications, and download)
Mobile money	*Agents:* 703 agents in central and costal region, other agents not indicated	*Agents:* 36 Orange shops, 400 partner shops and approximately 6250 agents countrywide.	*Agents:* 4000 agents countrywide,	has been suspended
	Services: transfers money to customers, pay utility bills, pay KRA (vehicle), Shop online using temporary debit card, buy air tickets, allows bulk payments	*Services:* Mobile money can transfer money, pay utility bills, top up debit card, access bank account, access to credit facilities, make online payments, earn loyalty points	*Services:* transfers money to customers, pay utility bills, school fees, pay rent, shop online and in major supermarkets, allows bulk payments, linking with Mobile-saving account	
Mobile banking	Partnership with 4 banks.	Partnership with Equity bank	partnership with 37 banks	Not Available

Carrier website	*Airtel*	*Orange*	*Safaricom*	*YuMobile*
Loyalty programs	*Airtel Zawadii* points are turned into cash discount vouchers	*Ziada Points* (points used to purchase devices on offers only), Angukia reward (surprise rewards), *Birthday treat* bonus, *Zawadika* reward (long term loyalty program)	*Bonga points* with flexible reward points, can be mixed with cash, and can also be used with other Safaricom partners	Not Available
International calls	Prices available on website in a tabulated form	Prices for VOIP and normal calls available on website	Prices available on website in a tabulated form	Prices available on website in a tabulated form
Entertainment	Free twitter, Airtel Live, Airtel Classifieds, Airtel football, Friendz Live chat, Islamic Portal	Short-codes to access several content providers (a form of outsourcing the service to other providers)	MXit, Facebook and twitter SMS, DSTv, E-newspaper, 411 information, news, prices of commodities, iCow	Horoscopes, Bible quotes, wisdom quotes, news, general knowledge, weight loss tips and others, yuVoice chat, DStv Mobile
Emergency services	911 rapid response Bima Mkononi life insurance provided by partners, mlocator (to locate others via mobile)	life insurance insurance on devices	directory service, emergency service, medical and life insurance service	Not Available
Devices and gadgets	Online shop provides full details, Devices are available at customer centers.	Website provides details of devices and offers available. Orange is the only carrier that provides insurance on devices	Online shop provides full details, Devices are available at customer centers.	Not Available
customer care response	FAQ for most services is available online, customer care email never responded, Facebook administrator responded quickly.	Limited self care portal available with a mob application. automated email response received but no reply to the email. Facebook responses are good.	FAQ online, Self service portal, online chat responded immediately	Email responded within1 hour Facebook responded the following day.

Carrier website	*Airtel*	*Orange*	*Safaricom*	*YuMobile*
Credit or debit cards	Option 1- generate temporary MasterCard via AirtelMoney for online transactions, option2- AirtelMonvey Visa debit card	Visa Debit card, online transactions, and has a money back option at major superstores in Kenya	My1963 card used as a debit card and topped up by M-Pesa	Not Available
Bundles	SMS, data, international voice, and combo bundles	Unlimited internet bundles, Double Play Combo(mixture of landline minutes, mobile minutes, mobile broadband, and fixed broadband), SMS bundles, international bundles	SMS, data, East Africa roaming and combo bundles	SMS and Data bundles only.
Borrowing credit	Airtime and data credit	Credit available on application. no further information available on the website	Airtime and data credit	Airtime credit
Advertisements	Use of all kinds of advertisements	Use of all kinds of advertisements	Use of all kinds of advertisements	Use of all kinds of advertisements
VOIP prices	Available but at the same rate as normal calls	Available at discounted rate especially for East Africa at ksh18 rest of Africa at 30, world at 35	Not Available	Not Available
Facebook likes	446,175	7,793,854	960,593	79,490
Facebook interactions	6 posts on weekdays, 4 weekends. customers mainly asking for information, many posts in Kiswahili (local language). Facebook admin responded when contacted.	Up to 8 posts on weekdays, most comments are from happy customers, almost negligible angry customers.	8 posts on weekdays and 3 posts on weekends, some customer complaints	at least 3 posts per day, many complaining customers

Appendix G

Customer Demographics

Customer	*Occupation*	*Age*	*Education level*	*Gender*	*Geographical location*	*Income(Ksh)*	*Marital status*
CI001	Business owner, web development	23	Bachelors	Male	Ruiru	0-6,000	relationship
CI002	Hotelier	39	High School	Male	Dagoreti	6001- 40,000	married
CI003	Driver, self employed	42	High School	Male	Kikuyu	41,000-100,000	married
CI004	Unemployed	29	Diploma	Male	Dagoreti	0-6,000	relationship
CI005	self employed-carpenter and driver	46	High School	Male	Dagoreti	0-6,000	married
CI006	Teacher	36	Diploma	Male	Dagoreti	0-6,000	married
CI007	counter/cashier	29	Bachelors	Male	Dagoreti	0-6,000	married
CI008	House wife	27	Diploma	Female	Dagoreti	0-6,000	married
CI009	Business owner	30	High School	Male	Dagoreti	6001- 40,000	married
CI010	Teacher	25	Bachelors	Female	Dagoreti	0-6,000	relationship
CI011	Librarian	25	Diploma	Female	Dagoreti	0-6,000	married
CI012	Teacher	27	Bachelors	Female	Dagoreti	0-6,000	Single
CI013	stores and proc. supervisor	54	High School	Male	Dagoreti	6001- 40,000	married
CI014	priest	68	Bachelors	Male	Eastern N.	0-6,000 + other	widow
CI016	project coordinator	28	Diploma	Female	Waithaka	41,000-100,000	Single mother
CI017	office manager (construction co.)	40	Bachelors	Female	Valley arcade	41,000-100,000	married
CI018	HR assistant	35	Diploma	Female	Ngong	6001- 40,000	married
CI019	marketer	28	Diploma	Female	Eastlands	6001- 40,000	married
CI020	HR officer	40	Bachelors	Female	Donholm	41,000-100,000	Single mother
CI021	HR internship/ Student	25	ongoing Bachelors	Male	south C	41,000-100,000	relationship
CI022	Banker	39	ongoing Masters	Male	Eastlands	>100,000	widow
CI023	Banker	31	Bachelors	Male	Eastlands	>100,000	married
CI024	project manager	25	ongoing Masters	Male	Kilimani	>100,000	Single
CI027	HR Manager	34	Bachelors	Female	Ngong	>100,000	married
CI028	program manager	33	Masters	Female	MburuMburu	>100,000	married
CI029	pharmaceutical representative	39	Diploma	Male	Eastlands	41,000-100,000	relationship

Appendix H

Customer usage

Customer Code	*Primary carrier*	*Average usage (Ksh/mon)*	*Secondary carrier*	*Average usage (Ksh/mon)*	*Other carriers*	*Tariffs and bundles*
CI001	Safaricom	1000	Airtel	500	safaricom (pre-paid), used to have orange	Saf: post paid, air: don't know
CI002	Safaricom	1000	Orange	500	Yu (short while)	don't know
CI003	Safaricom	3000	Airtel	700	Not Applicable	Saf: *Uwezo*, Air: don't know
CI004	Safaricom	3000	Airtel	when required	Yu (short while)	don't know
CI005	Safaricom	1000	Airtel	300	Yu (short while)	don't know
CI006	Airtel	500	Safaricom	300-1000	Not Applicable	don't know
CI007	Safaricom	2000	Used to use YU	Not Applicable	Orange (business internet)	wrong information
CI008	Orange	500	Safaricom	1500	Airtel (short while)	Saf: *Uwezo*, Orange: Tujuane
CI009	Safaricom	6000	Airtel	1000	Not Applicable	Saf: *Uwezo*, Air: don't know
CI010	Safaricom	600	Used to use YU	300	Not Applicable	don't know
CI011	Airtel	800	Safaricom	500	Not Applicable	Saf: *Uwezo*, Air: wrong info
CI012	Airtel	300	Safaricom	100	Unassigned	Saf: *Uwezo*, Air: don't know
CI013	Safaricom	3000	Used to use Kencel	Not Applicable	Not Applicable	Saf: *Uwezo*
CI014	Safaricom	4000	Airtel	2000	Not Applicable	don't know
CI016	Airtel	1000	Safaricom	100	Yu (short while)	Saf: wrong, others: postpaid
CI017	Airtel	900	Safaricom	700	safaricom (for business)	both postpaid
CI018	Airtel	1000	Safaricom	1000	Yu (short while)	don't know
CI019	Airtel	2000	Safaricom	500	Not Applicable	don't know
CI020	Safaricom	1500	Airtel	1000	Yu (short while)	don't know
CI021	Safaricom	2500	Airtel	1200	Orange and Yu	wrong information
CI022	Safaricom	4000	Airtel	2000	Unassigned	Saf: postpaid airtel: don't know
CI023	Safaricom	5000	Airtel	500	Not Applicable	Saf: don't know, Airtel: ulnliminet
CI024	Safaricom	7000	Airtel	100	Orange (short while)	don't know
CI027	Airtel	4000	Safaricom	3000	Not Applicable	don't know
CI028	Safaricom	2000	Airtel	1000	Not Applicable	don't know

CI029	Safaricom	1500	Airtel	1000	Unassigned	Saf: post paid, air: don't know

Appendix I

Effect of different variables (Part1)

Customer Code	*Willingness to change*	*rural vs urban*	*Effect of income*	*Effect of relationship*
CI001	conditional (reliability and cost)	Call more in Nairobi	No difference	More Usage
CI002	No (Mobile money, agents)	No difference	No difference	I don't know
CI003	conditional (stability and customer service)	call more in Nairobi	I get more I use more	More before marriage but also more when I'm traveling on business
CI004	No (Mobile money, network)	No difference	I get more I use more	More usage
CI005	conditional (network and cost)	call more in Nairobi	I get more I use more	didn't have phone before marriage
CI006	conditional (network and cost)	call more in Nairobi	I get more I use more	more after marriage
CI007	conditional (Mobile money, agents)	No difference	No difference	No difference
CI008	conditional (Mobile money, number)	more upcountry because of no orange network	I get less I use less	More before marriage
CI009	conditional (Mobile money, type of phone)	more upcountry because of customers	I get more I use more, I get less I SMS	More before marriage
CI010	conditional (price, type of phone)	in the village my phone doesn't work	I get more I use more	call more when in a relationship
CI011	No (network and cost)	call more in Nairobi	I get more I use more, I get less I use less	More before marriage
CI012	willing	call more in Nairobi	I get more I use more	call more when in a relationship
CI013	No	call more when I'm away or on business	No difference	didn't have phone before marriage

Customer Code	*Willingness to change*	*rural vs urban*	*Effect of income*	*Effect of relationship*
CI014	Unassigned	call more in the village	I get less I use less	more calls after passing away of spouse
CI016	No (network and cost)	No difference	No difference	calls no difference but data increases
CI017	No	call more in Nairobi	I get less I use less	more after marriage
CI018	conditional (network and cost)	Not Applicable	I get less I SMS	More before marriage
CI019	conditional (Mobile money, agents)	call more in Nairobi	I get less I SMS	More before marriage
CI020	No (Mobile money, agents)	less upcountry because of network	I get more I use more, I get less I use less	call more when in a relationship
CI021	willing	call more in Nairobi	I borrow credit from carriers	call less when in a relationship
CI022	conditional (network and coverage)	more upcountry because of customers	No change	call more when in a relationship
CI023	conditional (network and cost)	call more in Nairobi	I get more I use more, I get less I use less	More before marriage
CI024	conditional (Mobile money, cost)	No difference	No difference	call more when in a relationship
CI027	conditional (network and cost)	more data upcountry	No difference	More before marriage
CI028	conditional (network and cost)	call more in Nairobi	No difference	More before marriage
CI029	No	Airtel more because of no Safaricom network	No difference	call more than SMS in a relationship, but I don't spend more it is all in one bundle

Appendix J

Effect of different variables (Part2)

Customer Code	*Willingness to utilize MNP*	*Phone sharing*	*Time of call*	*Roaming*	*Marketing messages*
CI001	if Safaricom does not offer the same service	No	Night	Not Applicable	Not considering much
CI002	No	home only	Day, weekdays	Not Applicable	No effect
CI003	No	home only	Day, weekdays	Not Applicable	TV, effective
CI004	conditional	No	Night	local line	TV, effective
CI005	conditional	home only	Day, weekdays	Not Applicable	prefers personal approach
CI006	No	home only	Day, weekdays	Not Applicable	Not considering at all
CI007	No	home only	Day, weekdays	Not Applicable	Not considering much
CI008	conditional	No	Day, weekdays	Not Applicable	prefers direct contact
CI009	No	No	Anytime	Not Applicable	TV and SMS
CI010	No	No	I text anytime	Not Applicable	SMS
CI011	conditional	home only	Day, weekdays	Not Applicable	newspapers
CI012	conditional	No	evenings and holidays	roaming, unpleasant	friends
CI013	No	home only	Day, weekdays	local line	No effect
CI014	I will move	No	Day, weekdays	local line	prefers direct contact
CI016	No	No	Day, weekdays	Not Applicable	Radio and TV
CI017	No	home only	Day, weekdays	local line	Not considering at all
CI018	No	home only	Day and festive seasons	local line	No effect
CI019	conditional	No	Day, weekdays	Not Applicable	Not considering at all
CI020	No	home only	Day and festive seasons	roaming, unpleasant	Radio and TV
CI021	No	No	Night, weekends	roaming, unpleasant	TV, effective

Customer Code	*Willingness to utilize MNP*	*Phone sharing*	*Time of call*	*Roaming*	*Marketing messages*
CI022	No	No	Day, weekdays	Not Applicable	Not considering much
CI023	conditional	home only	Day, weekdays	Not Applicable	TV, newspapers
CI024	I will move	No	Day, weekdays	roaming, unpleasant	No effect
CI027	I will move	home only	Day, weekdays	roaming, unpleasant	internet and billboards
CI028	conditional	home only	Day, weekdays	roaming, unpleasant	TV, billboards
CI029	No	No	Day, weekdays	roaming, no complaints	TV, relevant messages only

APPENDIX K: Income vs. Usage Analysis

Customer Code	*Total usage\ (Ksh)*	*Income*	*Percentage (usage/average income)*	*Effect of variable Income*
CI024	7100	>100,000	7.10%	No difference
CI009	7000	6001- 40,000	30.43%	I get more I use more, I get less I sms
CI027	7000	>100,000	7.00%	No difference
CI014	6000	6001-40,000	26.09%	No change
CI022	6000	>100,000	6.00%	I get less I use less
CI023	5500	>100,000	5.50%	I get more I use more, I get less I use less
CI003	3700	41,000-100,000	5.25%	I get more I use more
CI021	3700	41,000-100,000	5.25%	I borrow credit from carriers
CI013	3000	0-6,000	100.00%	No difference
CI004	3000	6001- 40,000	13.04%	I get more I use more
CI028	3000	>100,000	3.00%	No difference
CI019	2500	6001- 40,000	10.87%	I get less I SMS
CI020	2500	41,000-100,000	3.55%	No difference
CI029	2500	41,000-100,000	3.55%	I get more I use more, I get less I use less
CI018	2000	0-6,000	66.67%	No difference
CI007	2000	0-6,000	66.67%	I get less I SMS
CI008	2000	6001- 40,000	8.70%	I get less I use less
CI017	1600	41,000-100,000	2.27%	I get less I use less
CI002	1500	0-6,000	50.00%	No difference
CI001	1500	6001- 40,000	6.52%	No difference
CI005	1300	0-6,000	43.33%	I get more I use more
CI011	1300	0-6,000	43.33%	I get more I use more, I get less I use less
CI006	1150	0-6,000	38.33%	I get more I use more
CI016	1100	41,000-100,000	1.56%	No difference
CI010	900	0-6,000	30.00%	I get more I use more
CI012	400	0-6,000	13.33%	I get more I use more