SERVICE QUALITY DIMENSIONS AND CUSTOMER SATISFACTION IN THE KENYAN TELECOMUNICATIONS SERVICE INDUSTRY: A CASE OF NOKIA SIEMENS NETWORKS

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DECLARATION

This research project is my original work and has not been submitted for the award of a degree in this or any other university or institution.

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This research project has been submitted for examination with my approval as the university supervisor.

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DEDICATION

I dedicate this research work to my beloved wife Gaudencia, to my daughters: Alicia, Nicole and Sandra. Their love and moral support during my MBA programme at the University of Nairobi enabled me come this far. I also dedicate this work to my dad Naman and mum Beatrice for their encouragement and prayers. Thanks to God Almighty for granting me life and strength.

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ABSTRACT

Managers at Nokia Siemens Networks frequently make decisions on service delivery and how to minimise the Service delivery costs. Strength of industry rivalry, lower switching costs by buyers of telecommunication equipment and services and their price sensitivity influence the managers' decisions on service delivery and cost of service delivery. The study sought to determine the factors affecting service quality in the Kenyan telecommunications vendors market and the relationship between service quality dimensions and customer satisfaction.

In order to satisfy the objectives of the study, a survey was conducted in the two dominant mobile telecommunications companies in Kenya namely Safaricom and Airtel. The findings revealed that even though the five service quality dimensions can lead to customer satisfaction, some of them were regarded to be of higher priority. Reliability dimension was considered to be having the highest impact on service quality while tangibility dimension was considered to have the least impact on service quality in the Kenyan telecommunication vendors market. Moreover the study established that all service quality dimensions apart from tangibility dimension should be improved and allocated more resources since they positively affect customer satisfaction. Tangibility dimension was found to have a negative relationship with customer satisfaction.

The study therefore recommends that Kenyan telecommunications vendors should put more effort on those Service quality dimensions that were found to be higher importance on Customer satisfaction. They include reliability factors, empathy factors and responsive factors. Moreover service quality dimensions were found to have a positive relationship with customer satisfaction hence should be improved to achieve more customer satisfaction.

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ABBREVIATIONS

CISCO……..Construction Industry Service Corporation

HP…… Hewlett-Packard Company

IBM……. International Business Machines Corporation

NORTEL……..Northern Telecom Limited

SERVPERF…….. Service Performance

SERVQUAL……..... Service Quality

SLA……...Service Level Agreement

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Managers in the service industry are under increasing pressure to demonstrate that their services are customer-focused and that there is continuous service improvement (Shahin, 2006). Understanding the concept of service quality and customer satisfaction adds Shahin (2006), helps service firms to identify service quality gaps, prioritise which service gaps to allocate resources and identify the cost-effective way of closing the gaps. AlBassam and AlShawi (2010) suggest that the survival of any firm in a highly competitive industry depends on its ability to provide the best service quality to its customers.

Service quality and customer satisfaction are very important concepts that companies must understand in order to remain competitive in business (Chingang & Lukong 2010). According to Chingang and Lukong (2010) it is important for firms to know how to measure service quality in consumers' perspective in order to better understand their needs and satisfy them. They add that service quality is considered very important because it leads to higher customer satisfaction, profitability, reduced cost, customer loyalty and retention

1.1.1 Service Quality

Service quality is described as a function of the differences between the expected service quality, managers' beliefs of customer needs, service quality specifications and the actual delivered service (Parasuraman, Zeithaml & Berry, 1994). Gronroos (1988) explains in the perceived service quality model that service quality experienced by a customer has two dimensions: technical quality and functional quality. Technical quality also known as service product, describes what the customer received during service delivery while functional quality also called product service, describes how the service is delivered. He further suggests that the organisation's image works as a filter and hence it can negatively or positively modify the customer's perception of service quality.

Service quality can be evaluated by different models such as SERVQUAL model (Parasuraman et al., 1994), SERVPERF model (Cronin & Taylor, 1992), Johnston, Silvestro, Fitzgerald and Voss Model (1990) and Gronroos service quality model (1984). The SERVQUAL model (Parasuraman et al., 1991) also called the Gap model has five service quality dimensions namely responsiveness, reliability, empathy, tangibility and assurance. SERVPERF model (Cronin &Taylor, 1992) was developed from SERVQUAL model. Cronin and Taylor argue that performance is the best measure that explains customers perceived service quality.

Johnston, Silvestro, Fitzgerald and Voss (1990) model categorises service quality in terms of satisfiers and dissatisfiers. This model has 18 dimensions where each dimension is either a dissatisfier or a satisfier depending on the individual characteristic of the customer and the circumstances. Gronroos (1984) model describes service quality expectations as a function of market communications, image, word of mouth, and consumer needs and learning, while experience is a product of a technical and functional quality, which is filtered through the image.

SERVQUAL model was adopted for this study because it is a comprehensive and empirically grounded tool (Wong & Sohal, 2002). It is a statistically tried and tested tool because of extensive field research and refinement (Brysland & Curry, 2001). The model has been used for measuring service quality in many service organisations and in different contexts.

1.1.2 Customer Satisfaction

Hansemark and Albinson (2004) argue that satisfaction is an overall customer attitude towards a service provider, or an emotional reaction to the difference between what customers anticipate and what they receive, regarding the fulfilment of some needs, goals or desire. Oliver (1997) defines customer satisfaction as a customer's fulfilment response; thus the judgement that a product or a service feature, or the product or service itself provides a pleasurable level of consumption-related fulfilment, including levels of under-

fulfilment or over-fulfilment. While Kotler (1994) describes customer satisfaction as the level of one's feelings after comparing the performance or results that he or she felt compared with expectations. Some studies have identified two aspects of satisfaction as transaction specific satisfaction and cumulative satisfaction (Andreassen, 2000).

According to Sureshchandar, Rajendra and Anantharaman (2002), customer satisfaction concerns the results of the customer's comparison of expected service quality and perceived service quality. Strong relationships exist between service quality and customer satisfaction but the two constructs are conceptually distinct from the customers' point of view. Sureshchandar et al., (2002) further add that customer satisfaction should be viewed as a multi-dimensional concept and measurement concepts should be generated with the same dimensions of service quality.

1.1.3 Relative Importance of Service Quality Dimensions on Customer Satisfaction

Chowdhary and Saraswat (2003) suggest that the relative weight that customers seem to give to each service quality dimension can be determined. They also observe that SERVQUAL instrument can be used to determine the relative importance of service quality dimensions. Chowdhary and Saraswat (2003) add that customers are quite consistent in ranking of the importance service quality attributes. According to Chowdhary (2000) generalisations are difficult to make because of variations in the basic nature of services and that the type of industry affect the design of service.

Identifying and prioritising service quality dimensions enables service providers to develop operational strategies (Sachdev & Verma, 2004). For instance banking and insurance services industry require least physical involvement of the customer thus tangibility dimension is relatively less important compared to assurance. Sachdev and Verma (2004) argue that allocating resources in a way that is consistent with customer priorities can enhance the effectiveness in the service operations.

1.2 Telecommunications Service Industry in Kenya

There are many telecommunication companies in Kenya today offering different telecommunication services (www.cck.go.ke). These telecommunication companies can be categorised into two groups based on the market they are operating in. The Mobile telecommunication operators make the first category while telecommunication vendors the second category (www.cck.go.ke).

1.2.1 Mobile Telecommunications Operators

The mobile telecommunication Operators market comprise of Safaricom, Essar telecommunication, Telkom Orange and Airtel (www.cck.go.ke). These companies offer mainly mobile telephony services, fixed telephony services and data services to subscribers. Industry statistics from Communication Commission of Kenya (2012) showed that Kenya mobile subscriptions stood at about 26 million subscribers and this represented about 68 per cent market penetration.

The mobile telecommunication operators market generated approximately $1.5billion in the year 2011 and was expected to continue this positive trend with a projected market value of $1.7billion by 2016 (Pyramid Research, 2012). The highest revenue came from voice traffic while the mobile data services were the fastest growing (Communication Commission of Kenya, 2011). Adoption of money transfer services and introduction of 3G-based services in the industry has contributed to the growth of the telecommunications industry (Communication Commission of Kenya, 2012).

Safaricom limited is the leading mobile telecommunication operator in Kenya with market share of 67 per cent of the total mobile subscription (Communication Commission of Kenya, 2012). It was formed in 1997 as a fully owned subsidiary of Telkom Kenya (http://www.safaricom.co.ke). Safaricom has since emerged as one of the fastest growing companies in Kenya and directly employs more than 1500 employees (http://en.wikipedia.org/wiki/Safaricom).

Safaricom network coverage is one of the widest in Kenya with all major towns and trading centres covered (http://www.safaricom.co.ke). Safaricom offers voice services, value added services, internet and money transfer services (Communication Commission of Kenya, 2012). Money transfer services known as M-pesa is one of the recent innovative services from Safaricom and has emerged as fastest growing (Communication Commission of Kenya, 2011). Competitive rivalry from the other 3 mobile telecommunication operators contributed to decline of Safaricom market share from 80 per cent in 2008 to 67 per cent in 2011 (Communication Commission of Kenya, 2011).

Airtel Kenya started its operations in Kenya as Kencell in the year 2000. It rebranded to Celtel then to Zain in 2008 and from the year 2010 it became Airtel Kenya (http://www.africa.airtel.com/). With a subscription of about 4 million mobile users it was the second market leader in Kenya's mobile telecommunication operators market. This represented 16 per cent of the market share (Communication Commission of Kenya, 2011).

Airtel's network coverage is relatively wide and continues to grow to cover major towns and market centres in Kenya (http://www.africa.airtel.com/). It mainly offers to its subscribers voice services, value added services, internet and money transfer services (http://www.africa.airtel.com/). It is the main competitor to Safaricom for the last 12 years (www.cck.go.ke).

1.2.2 Telecommunications Vendors

Telecommunication equipment manufacturers produce communication equipment and services that facilitate communications (Downing, 2012). These companies supply telecommunication equipment, offer software solutions and provide professional services to mobile telecommunication operators (Downing, 2012). Some of these services include Network design and planning, network optimisation, Network equipment deployment, Operation and maintenance, Consulting and network outsourcing services (https://inside.nokiasiemensnetworks.com).

Nokia Siemens Networks is a multinational data networking and telecommunications equipment company (https://inside.nokiasiemensnetworks.com). It was formed through a joint venture between Nokia networks business group and Siemens communications (www.guardian.co.uk/business/2006). It is the world's fourth-largest telecoms equipment manufacturer measured by 2011 revenues after Ericsson, Huawei and Alcatel-Lucent (http://uk.reuters.com/article/2012/04/25/). Nokia Siemens Networks has operations in around 150 countries including Kenya. The African region headquarters are in Kenya and oversees sales and service operations across African countries (https://inside.nokiasiemensnetworks.com).

Nokia Siemens Networks is thus a telecommunications service provider and provides services to Safaricom and Airtel as its key customers in the Kenyan telecommunications industry (https://inside.nokiasiemensnetworks.com). The offered services include network planning and optimisation, project implementation, maintenance and managed services. Its industry competitors are Ericsson, Huawei, Alcatel-Lucent and ZTE (Communication Commission of Kenya, 2012). Its other competitors include CISCO, Sun Microsystems, Nortel, IBM and HP.

1.2.3 Determinants of Service Quality in the Telecommunications Industry

Key issues in this industry include quality of service, cost of service, changing customer needs, and changing technological environment (Institute of Economic Affairs, 2002). Mobile telecommunication operators increasingly insist on timeliness and responsiveness in service delivery (https://inside.nokiasiemensnetworks.com). They demand faster resolution of network problems, shorter lead times in delivery of telecommunications equipment and implementation of projects (https://inside.nokiasiemensnetworks.com).

Issues that delight the mobile telecommunications operators include the willingness by telecommunication vendors to offer extra services at lesser costs and being flexible to adjust to the changing service needs (https://inside.nokiasiemensnetworks.com). To meet these needs, telecommunications vendors increase resources by hiring extra employees, training and developing of existing employees, investing in new technology and re-

designing of service delivery processes (https://inside.nokiasiemensnetworks.com). Acquiring extra resources implies that the telecommunication vendor has increased cost of service delivery (https://inside.nokiasiemensnetworks.com).

1.3 Statement of the Problem

There are many telecommunication vendors in the Kenyan telecommunications industry than there are mobile telecommunication operators (Communication Commission of Kenya, 2012).The telecommunications industry market structure can be described by using Porter's five forces namely industry competitive rivalry, buyer bargaining power, threat of new entrants, threat of substitutes and power of suppliers (Gupta, 2008).

Industry rivalry and buyer bargaining power are the most significant forces (http://en.wikipedia.org/wiki/Network_Equipment_Provider). Strength of industry rivalry, lower switching costs by buyers and buyer price sensitivity influence the telecommunication vendor managers' decisions on service delivery and cost of service (Gupta, 2008). The dilemma that emerges to the decision makers is whether to focus on lowering cost of service or focus on improving service delivery and hence better service quality.

Managers at Nokia Siemens Networks frequently make decisions on service delivery and how to minimise the Service delivery costs (www. inside.nokiasiemensnetworks.com). Service delivery decisions include setting up of Service improvement programmes, hiring, training and developing employees, and improving Customer relationship management systems (www. inside.nokiasiemensnetworks.com). Timeliness in project implementation and maintenance services, consistency in fault handling, flexibility in providing resources to unexpected service demands, willingness to help and collaborate with customers are some of the key factors of Service delivery (www. inside.nokiasiemensnetworks.com).

Sachdev and Verma (2004 argued that service firms in four industries namely restaurant, banking, insurance and salon were able to develop service operational strategies by first identifying and then prioritising service quality dimensions in order of importance. Dehghani (2006) confirmed the causal relationship between service quality dimensions with customer satisfaction and confirmed the dimensionality of service quality in the study of electrical services firm. In the study of the factors affecting Service quality in the Public health sector in Kenya Wanjau, Muiruri and Ayodo (2012) found that low employees capacity, low technology adoption, ineffective communication channels and insufficient funds affected delivery of service quality to patients in public health sector thus affecting health service quality perceptions, patient satisfaction and loyalty.

The studies by Sachdev and Verma (2004), Dehghani (2006) and Wanjau et al., (2012) were done in different technological and socio-cultural contexts. The studies also gave different results as regards importance of each of service quality dimensions. In the context of telecommunications services industry, this study sought to answer the following questions: are service quality dimensions of equal importance in the telecommunications industry in Kenya? What is the relationship between specific service quality dimensions with customer satisfaction?

1.4 Specific Research Objectives

To answer these research questions the study sought to achieve the following specific research objectives.

1. To determine the critical dimensions affecting the perceived service quality in the Kenyan telecommunications vendors market.
2. To establish the relationship between service quality dimensions and customer satisfaction.

1.5 Value of the Study

The findings of this research sought to help Nokia Siemens Networks and other telecommunication vendors to understand what factors had significant impact on satisfaction for their customers. Understanding factors that lead to customer satisfaction helps service providers to plan their resources and optimise service processes. Although there are other factors such as price, product quality etc other than service quality that determine customer satisfaction, service quality has been proven to be the best determinant of customer satisfaction in the service industries, (Wilson, Zeithaml, Bitner & Gremler, 2008). The study was also to contribute more knowledge to the already existing Service Quality and Customer Satisfaction literature and thus help students and other researchers in their related studies.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This study concerns two important concepts: Customer Satisfaction and Service Quality. First the literature on the dimensionality of service quality is discussed then a critical review of relationship between Service Quality and Customer Satisfaction is done. The literature on the concepts of Customer Satisfaction and Service Quality are also discussed. Finally a conceptual framework is developed.

2.2 Multidimensionality of Service Quality

In a conceptual study on service quality, Suuroja (2003) explores the main theoretical viewpoints of different researchers on the conceptualisation of service quality and its measurement. Suuroja (2003) observes that, traditional service quality models consider perceptions of service quality as based on multiple dimensions. Thus as service comprises of a complex bundle of explicit and implicit dimensions, it is logical to assume that the customers overall evaluation of service quality should be along these dimensions. Suuroja (2003) further argues that service quality should not be viewed as a separate construct but rather as an aggregate of several dimensions.

Suuroja (2003) concludes that there is need for a customised approach to service quality dimensions in different service sectors since the determinants of service quality may be unique in different service sectors depending on the specific features of the services. This conclusion is consistent with the widely held view by other studies. However the study has not evaluated the relative importance of each the service quality dimensions. To determine the value of aggregation one has to find out if the strengths in the different dimensions that lead to the same aggregate will have equal customer satisfaction.

2.3 Empirical Studies on Service Quality and Customer Satisfaction

A critical review of the literature on the relationship between the two concepts is covered in three different contexts. Firstly, in the context of electrical services industry in Sweden, Dehghani (2006) investigates the relationship between service quality and customer satisfaction. Secondly, Zekiri (2011) investigates the same issue but in the context of mobile telecommunication industry in Macedonia and finally Ahmed, Nawaz, Usman, Shaukat, Ahmad and Iqbal (2010) investigate the impact of service quality on customer satisfaction in the context of mobile telecommunication industry in Pakistan.

A case study by Deghani (2006) investigates the relationship between customer satisfaction and service quality and its measures in the context of electrical services industry in Sweden. The study identifies 6 important dimensions that can be used to measure quality of service and achieve competitive advantage. These dimensions are reliability, assurance, tangibility, empathy, responsiveness and price. Dehghani (2006) also concludes that it is not possible for a firm to perform at a superior level in all the 6 dimensions. Dehghani (2006) further finds that the 6 dimensions are not of equal importance and that in terms of importance to customer satisfaction these dimensions vary in importance starting from pricing to empathy which is the least important dimension.

The findings of this study are consistent with conclusions made by Suuroja (2003) to the extent of its multidimensionality of service quality but as a case study it comes with the weakness of generalisation that is associated with the research approach. However its findings are consistent with those carried out in other studies in different technological or socio-cultural contexts.

A case study by Zekiri (2011) in the mobile telecommunication industry context investigates service quality and customer satisfaction relationship. Factor analysis technique was used to explain the relative importance of service quality dimensions. The study finds that reliability was the most important dimension for customer satisfaction

while tangibility was the least important dimension. Zekiri (2011) also confirms that service quality had a significant impact on customer satisfaction.

The conclusion from this study confirmed the findings of Dehghani (2003) on the multidimensionality of service quality. However whereas Dehghani (2003) found price to be the most important dimension than other dimensions, Zekiri (2011) concluded that reliability was most important dimension. The study also had similar findings on the impact of service quality has on customer satisfaction from other studies. The generalisation of this study however needs to be tested in other socio-cultural contexts.

An empirical study on the impact of service quality on customer satisfaction was conducted by Ahmed, Nawaz, Usman, Shaukat, Ahmad and Iqbal (2010) in the context of mobile telecommunications industry in Pakistan. The study focused on the Short Message Services provided by mobile telecommunications companies. The study confirmed that overall service quality had a significant relationship with customer satisfaction. The study findings also indicate that tangibility, responsiveness, reliability and assurance dimensions had a positive impact on customer satisfaction but empathy had a negative impact on customer satisfaction.

The study confirms the findings by Dehghani (2006), Suuroja (2003) and Zekiri (2011) on the dimensionality of service quality. It also came up with the same conclusions as the study by Zekiri (2011) that service quality has an impact on customer satisfaction. However the study has not differentiated between service quality delivered and the perceived service quality. The link between the quality of service delivered and perceived service quality and customer satisfaction is not achieved. Moreover the study was done in a mobile telecommunications industry in Pakistan which is a different socio-cultural context and thus it was important to find out if the findings of this study could be generalised in another context such as sub-Saharan Africa.

2.4 Customer Satisfaction

Zeithaml and Bitner (2003) define satisfaction as the customer's evaluation of a product or service in terms of whether that product or service meets the customer needs and expectations. Failure to meet the needs and expectations is assumed to result in dissatisfaction with the product or service. It is also influenced by customers' emotional responses, their attributions and their perceptions of quality (Zeithaml & Bitner, 2003).

Andreassen (2000) suggest that two aspects of satisfaction are transaction specific satisfaction and cumulative satisfaction. Transaction-specific satisfaction is the customer's evaluation of his or her experience and reaction towards a particular service encounter (Cronin and Taylor, 1992; Boshoff and Gray, 2004). This reaction is expressed by the customer who experiences a service for the first time. While cumulative satisfaction refers to the customer's overall evaluation of the consumption experience to date (Johnson, Anderson & Fornell, 1995). It is from this accumulation that customers establish personal standards which are used to gauge service quality. Wang et al., (2004) state that cumulative satisfaction has been used more than transaction specific satisfaction in predicting customer behaviour and a firm's performance.

Satisfaction attributes may have different satisfaction implications for different customers or different markets (Anderson & Mittal 2000). The market environment can influence satisfaction and product use (Anderson & Mittal 2000). According to Mittal and Kamakura (2001) consumers with similar satisfaction ratings, yet different characteristics, may show different levels of repurchase behaviour. Thus it is clear that market and consumer segments should be important factors to consider when measuring customer satisfaction and its implications (Mittal & Kamakura 2001).

2.5 Service Quality

According to Chingang and Lukong (2011) Service quality is considered an important tool for a firm's struggle to differentiate itself from its competitors. The relevance of service quality to companies is emphasised because it offers a competitive advantage to companies to achieve customer satisfaction. Chingang and Lukong (2011) further point

out that by defining and understanding service quality, companies will be able to deliver services with higher quality levels presumably resulting in increased customer satisfaction.

Parasuraman et al., (1988) propose a service quality model with five dimensions namely tangibility, reliability, responsiveness, assurance, and empathy. Tangibility involves the appearance of physical facilities including the equipment, personnel, and communication materials. Reliability involves the ability to perform the promised service dependably and accurately. Responsiveness entails the willingness to help customers and providing prompt services. Assurance involves knowledge and courtesy of staff and ability to inspire trust and confidence. Finally empathy involves the provision of caring, individualised attention to customers' needs.

Table 2.5: The five service quality dimensions (Parasuraman et al., 1988)

Dimension	Description	Specific criteria that customers use
Reliability	Ability to perform service dependably and accurately	• Timeliness • Consistency • accuracy
Assurance	Knowledge and courtesy of staff; ability to inspire trust and confidence	• staff competence • respect for customers • credibility • safety and security • confidentiality
Tangibility	Physical representation or image of the service	• physical facilities • equipment • technology • employee appearance • communication materials
Empathy	Caring and individualised attention to customers	• individualised attention • appropriate service for customer needs • clear and timely communication • access to information, staff and services
Responsiveness	Willingness to help customers and provide prompt services	• willingness to help • prompt attention to requests • problem resolution • flexibility • complaint handling

Source: Parasuraman et al. (1988)

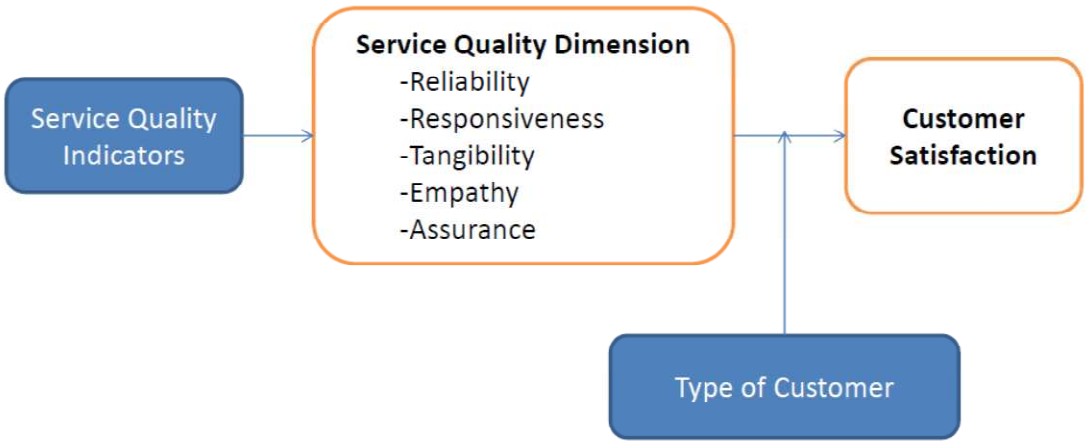
Other studies also suggest that service quality is an important indicator of customer satisfaction (Spreng & Mackoy, 1996). Attention to service quality can make an organisation different from other organisations and gain a lasting competitive advantage (Boshoff & Gray, 2004). Brady and Robertson (2001) suggest that as an effective

differentiating factor, service quality helps service firms to create the necessary competitive advantage.

2.6 The Summary of Literature Review and the Conceptual Framework

The critical reviews of the literature on the concepts of service quality and customer satisfaction indicated that there was a significant relationship between the two concepts. The literature reviews further showed that depending on the industry and type of service, ach of the 5 Service quality dimensions vary in importance (Suuroja, 2003; Zekiri, 2011; Dehghani, 2006; Ahmed et al., 2010). This conceptual framework looked at the service quality aspects within the telecommunications industry in Kenya between the telecommunication vendor as the service provider and the mobile telecommunication operator as the customer.

Figure 1: Service quality and customer satisfaction relationship framework



Source: Ahmed et al. (2006)

Mobile telecommunication operators' service quality expectation in today's competitive environment is high. This means that the quality gap between perceived service quality and expected service quality is narrow. Telecommunications vendors' are thus expected to improve their service delivery so as to enhance perceived service quality and therefore widening the gap between perceived service quality and expected service quality.

In this industry the main indicators of service delivery include quick resolution of network problems, timeliness in project implementation and shorter response times to the requests made by customer engineers. Telecommunications vendors are also required to have knowledgeable and highly skilled employees, detailed and up to date technical documents that are used for troubleshooting technical faults in the network, thoroughness and consistency in troubleshooting faults, respecting service level agreement (SLA) so as to minimise downtime of critical network systems, and easy access and use of customer portals to log technical faults.

Other indicators include delivery of service scope as contractually agreed by ensuring that the product features and functionality of the delivered telecommunications systems meet customer expectations. For instance mobile telecommunications operators expect the telecommunications systems capacity to be sufficient to carry peak traffic without service degradation and with minimal occurrence of system outages. Through partnership and collaboration, telecommunications vendors can provide product roadmaps, advise customers on new technological developments and development of customised products that suit specific customer needs. Willingness to help customers and providing personalised attention, ensures that there is service delight and hence customer satisfaction.

Finally mobile telecommunications operators expect handling of network security and information on their business plans with highest confidentiality. Trust and honest are key attributes expected from all employees accessing network systems or are privy to any

company information. For instance system access passwords and access permissions to controlled areas are considered confidential. Telecommunications vendors' employees with access to network systems need to be trustworthy and honest persons.

In this conceptual framework the type of customer is a moderating variable. The type of customer implied the size of the customer, type of service or the geographical location of the customer. For instance customers in hospitality industry are satisfied more by tangibility aspects than empathy while customers in insurance or banking industry are satisfied more by assurance aspects of service than tangibility.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This section briefly discusses the research design, data collection, and data analysis and presentation techniques. It sets out the research design in the first section, data collection method in the second section and finally data analysis and presentation in the last section.

3.2 Research Design

A case study design was adopted for this research so as to effectively realise the objectives of the study. The study was done in three organisations namely Safaricom and Airtel as customers from which specific departments directly consume services from Nokia Siemens Networks as the Service provider. Of these two Mobile telecommunication companies Safaricom with 67% of the subscriber base is the largest while Airtel has a subscriber base of 15% of total subscribers in Kenya (www.cck.go.ke). Broadly, these departments are Operations and Maintenance department, Project Implementation department and Network planning and optimisation department. These departments were treated as independent service consuming units.

A case study design is recommended when a holistic and in-depth investigation is needed (Kothari, 2004). Data was collected in one point in time in a cross sectional survey. The studies by Zekiri (2011), Dehghani (2006) and Wanjau et al (2012) also used Case study designs and their findings confirmed that the specific research objectives were adequately met.

3.3 Sample

The collected data concerned the attitudes and feeling of respondents from the three departments in the two mobile telecommunication companies. A group of 40 respondents was chosen through judgemental sampling from each of the Mobile telecommunications companies. This number comprised of employees who were readily available for the survey and directly received Maintenance, Project Implementation or Network Planning

and Optimisation services. These are the most important services provided by Nokia Siemens Networks and also by other telecommunication vendors and were adequate to be used for the research work.

3. 4 Data Collection

A 38-question questionnaire was used to collect data from the 80 respondents. The section on the customer perceived service quality was derived from the SERVQUAL instrument. Items in the questionnaire are from past literature and the design of the questions follows the guidelines provided by Parasuraman et al., (1991) in adapting SERVQUAL instrument.

Table 3.4: Derived from the Servqual Instrument (Parasuraman et al., 1991)

Variable	**Indicator**
Reliability	The extent to which service delivery is done as promised
Reliability	The extent to which technical tasks are correctly executed on first attempt
Reliability	The extent to which technical reports are free of errors and are accurate
Reliability	The extent to which service is delivered consistently
Assurance	The extent to which service provider employees instil confidence in the customer
Assurance	The extent to which service providers employees are courteous
Assurance	The extent of employee training and knowledge to handle technical issues
Assurance	The extent of safety when the customer is transacting with service provider
Assurance	The extent to which the service provider's employees respect the customer
Tangibility	The extent to which it's easy to install the equipment

Tangibility	The extent to which the communication materials are easy to use
Tangibility	The extent of innovation and technology of the service provider's products
Tangibility	The extent to which service providers employees are presentable
Empathy	The extent to which the service provider is available and never too busy to attend to customer needs
Empathy	The extent to which the service provider communicates clearly and timely
Empathy	The extent of individualised attention by service provider in handling unique needs of the customer
Empathy	The Extent to which service provider understands most of the customer's needs
Empathy	The extent to communication is clear and timely from the service provider
Responsiveness	The extent to which the service provider is interested in resolving network problems
Responsiveness	The extent to which the service provider is prompt in service delivery
Responsiveness	The extent to which the service provider is willing to help when called to do so by the customer
Responsiveness	The extent of flexibility of the service provider

Source: Parasuraman et al. (1991)

The questionnaire was self-administered and was distributed to 80 respondents via email. Self administered questionnaire brought with it the advantage of lower costs, reduced bias and the distribution was done faster and to a large number of respondents. The questionnaire comprised of four sections namely Customer information, Overall Customer Satisfaction, Service Quality factors and Perceived Service Quality Evaluation.

Customer Information in section A, sought to provide information on the type of the customer. The type of customer was a moderating variable in the conceptual framework. Section B of the questionnaire was used to collect data on the overall Customer

Satisfaction. This section together with section D sought to collect data to enable realisation of objective 2 of the study. Section C comprised of 10 predetermined Service quality factors or attributes that affect Service Quality. These factors constituted the five SERVQUAL dimensions. Section C was thus important to meet objective 1 of the study. Lastly section D of the questionnaire had 22 statements derived from the SERVQUAL instrument and provided scores on the Perceived service quality. The statements sought to collect the perceived service quality scores from the perspective of the customer. The 22 statements were framed so as to cover all the five SERVQUAL dimensions. Section B, C and D used the 5-point Likert scales to collect the Survey data.

3.5 Data Analysis and Presentation

The collected data was analysed and presented by descriptive statistics indicating levels for each variable. The first objective was met first by computing the mean of each of the service quality factors and their standard deviation and then by testing the difference between means. Linear Regression model was used to realise the second objective. The mathematical expression for the regression model is given as follows:

$$\mathbf{Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon}$$

Where, **Y** is the dependent variable in this case Customer Satisfaction while $\mathbf{x_1, x_2, x_3, x_4}$ **and** $\mathbf{x_5}$ are the independent variables in this case the 5 service quality dimension namely Reliability, Responsiveness, Empathy, Assurance and Tangibility respectively. $\propto$ and $\boldsymbol{\beta}$ are regression coefficients while $\boldsymbol{\varepsilon}$ is the error term.

CHAPTER 4: RESULTS, ANALYSIS AND DISCUSSIONS

4.1 Introduction

In this chapter the results of the findings are presented, analysed and discussed. The findings are summarised and presented in the form of proportions, means and tables. Consequently, the findings are analysed and interpreted in line with the objectives of the study which were:

1) To determine the critical dimensions affecting the perceived service quality in the Kenyan telecommunications vendors market.
2) To establish the relationship between the perceived service quality dimensions and customer satisfaction

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4.2 Results

This section presents the results of the survey conducted in the two mobile telecommunication operators. Of the 80 questionnaires distributed for this research, 60 useable questionnaires were returned giving a response rate of 75 percent, which was considered satisfactory for subsequent analysis

4.2.1 Results relating to the Interviewed Customers

The respondents were asked to indicate the name of company they worked for. From the research findings, 55 percent of the total respondents were from Airtel while 45 percent were from Safaricom. This means each of the core customer groups was adequately represented.

4.2.2 Results relating to the level of Customer Satisfaction

The research sought to establish what level of satisfaction the respondents derived from consuming the services delivered by Nokia Siemens Networks. Using a scale of 1 to 5 (1-very dissatisfied to 5-very Satisfied) the research findings indicate that 31 respondents

were satisfied, 12 respondents were very satisfied and 8 respondents were neutral. It was noted that only 5 respondents were dissatisfied as shown in table 4.1.2 below.

Table 4.2.2 Level of Customer Satisfaction

Level of Satisfaction	Frequency
very Dissatisfied	5
Dissatisfied	4
Neutral	8
Satisfied	31
Very Satisfied	12
Total	60

Source: from Research data

4.2.3 Results relating to how critical the Service Quality Dimensions are

The research study sought to determine which service quality dimensions were considered critical on service quality in the Kenyan telecommunications vendors market. Using a scale of 1 to 5 (1- not important to 5-very important) the respondent was asked to indicate how important he or she considered each of the five service quality dimensions. From the research findings, it was established that reliability had the highest mean of 4.3167 followed by responsiveness dimension with a mean of 4.1833.It was noted that assurance dimension had the least mean of 3.433 as shown in table 4.1.3 below.

Table 4.2.3 Evaluation of Service quality dimensions' importance

Dimension	N	Mean	Std. Deviation
Reliability dimension	60	4.3167	1.02910
Responsiveness dimension	60	4.1833	.70089
Empathy dimension	60	4.0583	1.07787
Tangibility dimension	60	3.6000	.91503
Assurance dimension	60	3.4333	.87074
Valid N (listwise)	60		

Source: from Research data

4.2.4 Results relating to Perceived Service Quality Dimensions

The study sought to determine the customer's perspective on the service quality of Nokia Siemens Networks service delivery. Using a scale of 1 to 5 (1- strongly disagree to 5- strongly agree) the respondents were asked to indicate how they felt about each of the service quality dimensions: reliability, responsiveness, empathy, assurance and tangibility. From the research findings, it was established that reliability dimension had the highest mean of 4.1333 followed by responsiveness dimension with a mean of 3.8267.It was noted that assurance dimension had the least mean of 3.7333 as shown in table 4.1.4 below.

Table 4.2.4: Perceived Service Quality Dimensions

	N	Mean	Std. Deviation
Reliability dimension	60	4.1333	.67565
Responsiveness dimension	60	3.8267	.48077
Empathy dimension	60	3.7792	.47410
Assurance dimension	60	3.7333	.73338
Tangibility dimension	60	3.6908	.67300
Valid N (listwise)	60		

4.3 Analysis

The results on the evaluation of service quality dimension importance and the relationship between customer satisfaction and perceived service quality is analysed in this section.

4.3.1 Analysis of how critical the five service quality dimensions are

The research study wanted to determine whether all service quality dimension means were the same (H_0) or if the means were not the same (H_a). An analysis of difference between means of the five service quality dimensions was done using ANOVA as shown in table 4.2.1 below. Study used the following hypothesis:

H_0: There is no difference of means in the service quality dimensions means

H_a: There is a difference of means in the service quality dimensions means

From the findings, it was evident that at 95% confidence level 4 Service quality dimensions means were statistically significant. These were reliability dimension, empathy dimension, tangibility dimension and assurance dimension (high t-values, $p < 0.05$.). However, responsiveness dimension mean was not statistically significant (low t-value, $p > 0.05$.) as shown in table 4.2.1 above. Thus the means for reliability, empathy, tangibility and assurance have no difference while the mean for responsiveness was different.

Table 4.3.1 ANOVA-Comparing the Service Quality Dimension Means

		Sum of Squares	df	Mean Square	F	Sig.
Reliability dimension	Between Groups	22.485	4	5.621	7.730	.000
	Within Groups	39.998	55	.727		
	Total	62.483	59			
Responsiveness dimension	Between Groups	2.380	4	.595	1.230	.309
	Within Groups	26.604	55	.484		
	Total	28.983	59			
Empathy dimension	Between Groups	30.214	4	7.554	10.838	.000
	Within Groups	38.332	55	.697		
	Total	68.546	59			
Assurance dimension	Between Groups	28.807	4	7.202	24.870	.000
	Within Groups	15.927	55	.290		
	Total	44.733	59			
Tangibility dimension	Between Groups	12.087	4	3.022	4.454	.003
	Within Groups	37.313	55	.678		
	Total	49.400	59			

Source: from Research data

4.3.2 Service Quality Dimensions and Customer Satisfaction Relationship Analysis.

The research study wanted to establish the relationship between service quality dimensions and customer satisfaction. Positive effect was reported on reliability dimension, responsiveness dimension, empathy dimension and assurance dimension (β_1=0.491, β_2=0.338, β_3=0.572 and β_4=1.310) respectively. However, negative effect was reported for tangibility dimension (β_5=--1.440). The findings are as shown in table 4.2.1 below.

Table 4.3.2a Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-1.704	1.413		-1.206	.251
Reliability dimension	.491	.257	.491	1.912	.080
Responsiveness dimension	.456	.538	.338	.848	.413
Empathy dimension	.763	.526	.572	1.450	.173
Assurance dimension	1.253	.448	1.310	2.794	.016
Tangibility dimension	-1.595	.631	-1.440	-2.528	.027

Source: from Research data

It was established that for a 1- point increase in the independent variables, customer satisfaction was predicted to increase by 6.500, given that all the other factors are held constant. The findings are as shown in tables 4.2.2 below.

Table 4.3.2b ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.953	5	.791	3.726	.029[a]
	Residual	2.547	12	.212		
	Total	6.500	17			

Source: from Research data

Moreover, there was a positive relationship (R=0.780) between the variables. The study also revealed that 60.80 % of customer satisfaction can be explained by the independent variables. The findings are as shown in table 4.2.3 below.

Table 4.3.2c Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.780[a]	.608	.445	.461

Source: from Research data

From the research findings above, the equation for the regression model can be expressed as given below:

$\mathbf{Y} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$

$\mathbf{Y} = 6.500 + 0.491 X_1 + 0.338 X_2 + 0.572 X_3 + 1.310 X_4 - 1.440 X_5 + \varepsilon$

4.4 Discussions

From the research findings, all customer groups were adequately represented in the sample. There was general satisfaction on services being offered by Nokia Siemens Networks. Only 5 respondents indicated that they were dissatisfied with the quality of service but based on the sample size of 60 respondents this was insignificant.

The critical service quality dimensions that were found to affect perceived service quality in the Kenyan telecommunications vendors market were reliability, responsiveness and empathy which were considered to be important. Tangibility and assurance dimensions were found to have a neutral impact on perceived service quality. Reliability dimension was found to have the highest impact on perceived service quality while assurance was found to have the least impact on perceived service quality. Moreover, the results could be statistically relied upon since it was established that all means were the same apart from responsive dimension variable.

There was a general positive relationship (R=0.780) between the level of satisfaction and service quality dimensions as indicated in table 4.2.3. Moreover, 60.80 % of customer satisfaction was explained by the service quality dimensions. Reliability, responsiveness, empathy and assurance dimensions were found to have a positive effect on customer satisfaction while tangibility had a negative impact. Assurance was found to have the highest positive effect of 131.0% on customer satisfaction while responsiveness quality dimension was found to have the least positive effect of 33.8% on customer satisfaction. Tangibility dimension was the only variable that was found to have a negative effect of -144.0% on customer satisfaction. This means that tangibility dimension was considered not to be influencing the level of customer satisfaction in the Kenyan telecommunications industry.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

Objective of the study was to determine the critical service quality dimensions affecting the perceived service quality in the Kenyan telecommunications vendors market and the relationship between service quality dimensions and customer satisfaction. It was noted that there was a general satisfaction on services being offered by Nokia Siemens Networks. This is supported by the results of the various descriptive and inferential statistics.

Reliability dimension was found to have the highest impact on perceived service quality while assurance was found to have the least impact on perceived service quality. Moreover, the results were statistically significant since $p<0.05$ for all service quality dimensions apart from responsiveness dimension which had $p>0.05$.

It was also found that there was a general positive relationship between the level of satisfaction and service quality dimensions. Reliability, responsiveness, empathy and assurance dimensions were found to have a positive effect on customer satisfaction while tangibility had a negative impact. Assurance was found to have the highest positive effect of 131.0% on customer satisfaction while responsiveness quality dimension was found to have the least positive effect of 33.8% on customer satisfaction. Tangibility dimension was the only variable that was found to have a negative effect of -144.0% on customer satisfaction.

5.2 Conclusions

From the study findings it can be concluded that even though all the service quality dimensions are important for service quality, some dimensions were found to be more important than others. Thus the service quality dimensions do not have the same priority on the perceived service quality.

Even though there was a positive relationship between level of customer satisfaction and the perceived service quality dimensions, tangibility dimension was found to have a negative effect. It can be concluded that all service quality dimensions apart from tangibility dimension should be improved since they positively affect customer satisfaction. Therefore it can be argued that since Nokia Siemens Networks mostly offers maintenance services which are considered to have a relatively low degree of intangibility, respondents felt that the tangibility dimension does not have much effect on customer satisfaction.

5.3 Recommendations

This study recommends that reliability, responsiveness and empathy dimensions should be enhanced further in order to increase perceived service quality. Benchmarking should be used to borrow best practices on these three critical dimensions that affect perceived service quality. Moreover reliability, responsiveness, empathy and assurance dimensions should also be enhanced further in order to achieve high customer satisfaction since they had a positive impact on level of satisfaction. Less energy should be directed towards tangibility since it had a negative impact on service quality.

5.4 Limitations of the study

This study was successfully undertaken but not without a few limitations. One such limitation was that some of the respondents declined to respond to the questionnaires. The time period covered by the study and the resources available to the researcher were also limited.

5.5 Suggestions for further research

Arising from this study, the following directions for future research in Operations were recommended: First, this study focused on the services of one telecommunication vendor in the Kenyan telecommunications vendors market. Therefore, generalisations cannot adequately extend to other telecommunications vendors .Based on this fact among others, it is therefore recommended that a broad based study covering all telecommunications vendors in Kenya should be done to find out factors affecting service quality and the relationship between service quality dimensions and customer satisfaction in the entire Kenyan telecommunications vendor sector. Similar surveys to this can be replicated in a few years to come to asses if the factors have changed as more telecommunications vendors are established in Kenya.

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APPENDICES

Appendix I: Introduction Letter

RE: SERVICE QUALITY DIMENSIONS AND CUSTOMER SATISFACTION

I am a postgraduate student undertaking a Master of Business Administration, Operations Management degree at the University of Nairobi. Your experience in telecommunication industry is quite important and would add more knowledge on the concepts of Service quality and Customer satisfaction. The study is on the two concepts. Your contribution by filling the questionnaire as objectively as you can will be highly appreciated. Please do not include your name on the questionnaire. A copy of this Research project will be made available to you on request. Thanking you in advance.

Joseph Akaka Otemba

Appendix II: Questionnaire

This research questionnaire was designed to collect data on how you feel about the Service delivery by Nokia Siemens Networks regarding Maintenance (Care), Project Implementation and Network Planning and Optimisation services.

Section A: Customer Information

1.1 Please indicate the name of your company: ……

1.2 Tick ☑ the most appropriate box corresponding to the type of Service you receive from Nokia Siemens Networks

Maintenance (Care) Services [ ]

Project Implementation Services [ ]

Network Planning and Optimisation Services [ ]

1.3 How many persons are you in your department?

< 40 [ ] **40 ≤ 60** [ ] **60 ≤ 80** [ ] **>80** [ ]

1.4 Please indicate your gender and age bracket

Male [ ] Female [ ]

21-30 [ ] 31-45 [ ] above 45 [ ]

1.5 How long have you worked in your department

1- 2 years [ ] 3-5 years [ ] above 5 years [ ]

Section B: Overall Customer Satisfaction

How overall are you satisfied with the Services you receive from Nokia Siemens Networks?

Very dissatisfied [ ] Dissatisfied [ ] Neutral [ ]

Satisfied [ ] Very Satisfied [ ]

Section C: Service Quality Dimensions Importance

In receiving Services from Nokia Siemens Networks, indicate to what extent each of the following indicators is important to the Quality of Service. Use the scale 1-5 where: 5-Very important, 4-important, 3-Neutral, 2-not important, 1-not at all important

Description	**Choose one option only**				
Extend to which Services are delivered on time	1	2	3	4	5
Extend to which Service delivered is consistent with Service Level Agreement (SLA)	1	2	3	4	5
Extend to which Nokia Siemens Networks staff is competent in delivery of Service	1	2	3	4	5
Extend to which Nokia Siemens Networks staff is able to understand your company's unique needs	1	2	3	4	5
Extend to which Nokia Siemens Networks is responsive to your requests and needs	1	2	3	4	5
Extend of Nokia Siemens Networks technology Innovativeness	1	2	3	4	5

Extend to which product documentation and Technical Reports are helpful in your work	1	2	3	4	5
Extend to which Nokia Siemens Networks employees are respectful and courteous	1	2	3	4	5
Extend to which Nokia Siemens Networks communicates clearly and timely	1	2	3	4	5
Extend to which you feel safe when working with any Nokia Siemens Networks personnel	1	2	3	4	5

Section D: Perceived Service Quality Evaluation

This section requires your response on how you feel about the service quality that Nokia Siemens Networks provides. Please indicate the extent to which you agree or disagree with the following statements. Use the scale: 5-strongly agree, 4-agree, 3-Neutral, 2-disagree and 1-strongly disagree.

Statement	**Choose only one option**				
Nokia Siemens Networks delivers service as promised e.g. by respecting Service level agreement (SLA)	1	2	3	4	5
Nokia Siemens Networks always has interest to resolve problems reported to the respective departments	1	2	3	4	5
All technical tasks are executed correctly on the first attempt by Nokia Siemens Networks Engineers	1	2	3	4	5
All Technical Reports are always accurate and error free	1	2	3	4	5
Nokia Siemens Networks staff always give prompt services when called to do so	1	2	3	4	5

Nokia Siemens Networks always informs you exactly when specific service delivery will be performed	1	2	3	4	5
Nokia Siemens Networks employees are always willing to assist you to resolve network problems when called to do so	1	2	3	4	5
Nokia Siemens Networks employees are never too busy to respond to any of your requests	1	2	3	4	5
Nokia Siemens Networks teams are always flexible to work with you	1	2	3	4	5
Nokia Siemens Networks employees behaviour instil confidence in you	1	2	3	4	5
Nokia Siemens Networks employees are always courteous	1	2	3	4	5
Nokia Siemens Networks employees are well trained and knowledgeable to handle technical issues	1	2	3	4	5
You always feel safe when transacting with Nokia Siemens Networks staff	1	2	3	4	5
Nokia Siemens Networks employees are always respectful to you and your colleagues	1	2	3	4	5
Nokia Siemens Networks always gives individual attention to your company's specific needs	1	2	3	4	5
Nokia Siemens Networks employees are always neat and orderly when delivering services to you	1	2	3	4	5
Nokia Siemens Networks teams understand clearly your company needs	1	2	3	4	5
Nokia Siemens Networks staff communicates clearly and timely	1	2	3	4	5

Nokia Siemens Networks telecom equipments are easy to install and use	1	2	3	4	5
Nokia Siemens Networks operations and maintenance tools are easy to use	1	2	3	4	5
Nokia Siemens Networks provides innovative and advanced technology	1	2	3	4	5
Nokia Siemens Networks is always consistent with service delivery contractual agreements	1	2	3	4	5