EFFECT OF TECHNOLOGY BASED CUSTOMER RELATIONSHIP MANAGEMENT ON SERVICE QUALITY IN THE TELECOMMUNICATIONS INDUSTRY IN ARUSHA, TANZANIA

BY
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JUNE, 2015
DECLARATION

This thesis is my original work and it has not been presented to any other University for award of any degree.

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DEDICATION

I would like to dedicate this work to my family, Foya family for their endless encouragement and support in my life.
ACKNOWLEDGMENT

My sincere gratitude goes to the Almighty God who has granted me the gift of life, ability of open mind, health and strength to do the entire work contained in this thesis. Secondly, my gratitude goes to my supervisors, Dr. James Kilika and Dr. Stephen Muathe for their support and supervision throughout this study, may the Almighty God bless them abundantly. Thirdly, I would like to recognize the support from Kenyatta University (KU) library and Academic staff, I am so thankful to them. My gratitude also goes to my family, Foya family, for their immeasurable and unlimited love, endless support and their guidance throughout my school life. Without them I would not have achieved this milestone. I also recognize the support from the staff in Vodacom, Tigo, Airtel and Zantel for taking their time to answer the questionnaires. Furthermore, I acknowledge Saint Augustine University of Tanzania for the scholarship to pursue this degree of Master of Science in Marketing. Lastly, my gratitude goes to all my friends and classmates who have been there to encourage me to the completion of this work, may God bless them abundantly.
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OPERATIONAL DEFINITION OF TERMS

**Customer Relationship Management**  Is a comprehensive approach which provides seamless integration of every area of business that serves the customer- namely marketing, sales, customer services and field support through the integration of people, process and technology.

**Service Quality**  Is an assessment of how well a delivered service conforms to the client's expectations. In this study service quality was used to refer to customers’ expectations with regard to how well they receive mobile telephone based services in the form of internet data, text messages and voice services from mobile phone companies.

**Technology**  Involves scientific methods and materials or equipments used to achieve a commercial or industrial objective.

**Information Technology**  Is a term that encompasses all forms of technology used to create, store, exchange and utilize information in its various forms including business data, conversations, still images, motion pictures and multimedia presentations.

**Technology based CRM**  Is an integration of marketing strategies and marketing practices through ERP Softwares that assist companies to manage, record and evaluate interactions between companies and their customers.
for the purpose of enhancing the relationships between companies and customers.

**Micro Environment factors**

These are external environmental forces with potential to influence a firm’s decisions much more frequently and whose impact on the firm operations is much more direct. This study focused on two aspects of micro environment factors which are competition and supplier behavior.

**Telecommunications Industry**

Is a sector of an economy that deals with the science and technology of communication over a significant distance through transmission, emission or reception of information as words, sounds, signs, signals or images by the means of wire, radio, visual or other electromagnetic systems. The Industry comprises firms in the electronic media, trunk call firms, mobile phone service providers and all others that supply and distribute for these firms. This study focused on the mobile phone service providers and their distributors.
# ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>B2B</td>
<td>Business to Business</td>
</tr>
<tr>
<td>B2C</td>
<td>Business to Customers</td>
</tr>
<tr>
<td>CCC</td>
<td>Customer Call Center</td>
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<tr>
<td>CIC</td>
<td>Customer Interaction Center</td>
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<td>CRM</td>
<td>Customer Relationship Management</td>
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<tr>
<td>CSS</td>
<td>Customer Sales and Support</td>
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<td>DW</td>
<td>Durbin-Watson</td>
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<tr>
<td>E2E</td>
<td>End to End</td>
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<tr>
<td>ERP</td>
<td>Enterprise Resource Planning</td>
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<tr>
<td>IDIC</td>
<td>Identify, Differentiate, Interact and Customize</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
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<tr>
<td>ICT</td>
<td>Information Communication Technology</td>
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<tr>
<td>JIT</td>
<td>Just In Time</td>
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<tr>
<td>KU</td>
<td>Kenyatta University</td>
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<tr>
<td>MRP</td>
<td>Material Resource Planning</td>
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<tr>
<td>PEOU</td>
<td>Perceived Ease-Of-Use</td>
</tr>
<tr>
<td>PU</td>
<td>Perceived Usefulness</td>
</tr>
<tr>
<td>R &amp; D</td>
<td>Research and Development</td>
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<td>SERVQUAL</td>
<td>Service Quality</td>
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<tr>
<td>SFA</td>
<td>Sales Force Automation</td>
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<tr>
<td>SM</td>
<td>Sales Management</td>
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<tr>
<td>TAM</td>
<td>Technology Acceptance Model</td>
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<tr>
<td>TCRA</td>
<td>Tanzania Communication Regulatory Authority</td>
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<tr>
<td>TQM</td>
<td>Total Quality Management</td>
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<tr>
<td>US</td>
<td>United States</td>
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<tr>
<td>UTAUT</td>
<td>Unified Theory of Acceptance and Use of Technology</td>
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<tr>
<td>VIF</td>
<td>Variance Inflation Factor</td>
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ABSTRACT
Customer relationship management is a concept that was adopted by companies around 1990s. This concept cannot be ignored by companies, taking into consideration that companies are operating in a very competitive environment brought about by technological advancements and globalization in the business environment. The aim of customer relationship management is to create, nurture and maintain mutual relationships between a company and its customers so as to attain customer loyalty for long term benefits of both customers and company. Therefore, this study concentrate to establish the effect of technology based Customer Relationship Management on Service Quality, in the telecommunications industry in Arusha City in Tanzania. The research had five specific objectives. The first objective was to assess the effect of system automation on service quality, the second was to assess the effect of system functionality on service quality, the third was on establishing the effect of system user acceptance on service quality, the fourth was on examining the effect of system integration on service quality and the fifth was on determining the moderating effect of micro environment factors of competition and supplier behavior on the relationship between technology based Customer Relationship Management and Service Quality. The study used an Explanatory and Descriptive research designs. The target population of the study comprised the four telecommunications companies in Tanzania (Airtel, Tigo, Vodacom and Zantel), their respective distributors and customers with a combined total population of 26,514,895. A multi-stage sampling technique was used to draw a representative sample size of 323 respondents from the total population. The study used structured questionnaires in data collection. A total number of 226 mobile subscribers in Arusha were administered with the questionnaires and 97 respondents from mobile phone operators and their distributors in several departments. The primary data was collected on a spot basis between June and August 2014. Data obtained from the field was analyzed using both descriptive and inferential statistics. Measures of central tendency and measures of dispersion of the mean and standard deviation respectively and relevant charts were used to summarize the data. Multiple Linear regression analysis was applied to test the hypotheses. The descriptive results of the research indicate that mobile phone companies have employed the technology based CRM systems to a good extent (μ=4; δ=0.9) so as to integrate their business activities towards delivering services to customers. The results of the hypotheses tested indicate that there is no statistically significant relationship between both system automation and system functionality and service quality (β=-0.109, p=0.766 β=-0.244, p=0.584) respectively. However, the study finds that there is a statistically significant relationship between system user acceptance and service quality (β=-0.588, p=0.021) as well as system integration and service quality (β=0.814, p=0.043). The moderating variable, micro environment has influence on the relationship between the independent variables and the dependent variable. The study recommends that the mobile service organizations need to invest not only in technology based CRM but also to invest in other marketing practices since they have potential to enhance the level of service quality offered by mobile phone companies. The study concludes that for the service based companies, it is important to integrate technology based CRM resources with other aspects of the micro environment such as competition and supplier behavior for better performance. The study suggests that future research on technology based CRM needs to incorporate the aspects of individual IT users’ demographic and psychological characteristics.
CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The Customer Relationship Management (CRM) concept evolved in the 1980s but was much more critically adopted by firms in the late 1990s. The concept has since then been defined differently by different authors. Some scholars have defined it in terms of relationships without associating it with technology, while others have defined it in terms of relationships closely associated with technology (Chan & Popovich, 2003; Thomson, Knox & Maklan, 2009; Xu, Yen, Lin & Chou, 2002). According to Baran, Galka and Strunk (2008), CRM is the automation of horizontally integrated business processes involving customer touch point and customer service through telephone, e-mail, web, and direct interaction. The CRM application architecture combines both operational technologies as well as analytical technologies. The operational technology involves transaction-oriented business process management while the analytical one involves data performance management. The CRM concept right from its roots is at the heart of relationship marketing activities of firms (Egan, 2008).

Relationship marketing focuses on maintaining a continuous relationship with customers and building long term bonds that aim at enhancing value for customers. It offers an opportunity for companies to learn more about customers’ needs so as to properly design and provide customized products and services that will satisfy, delight and retain customers for the long term period. Through this, marketers are able to customize and provide more personalized and relevant services to clients. There are several forces such as competition and globalization that
drive marketers to build relationships associated with technological advances in IT that make relationship marketing feasible by enabling companies to record details from every transaction (Thompson, 2001). Relationship marketing management has accelerated the growth of direct marketing and enabled more and more companies to enter into one on one relationship with their customers. Marketers and academicians point to the fact that while acquiring a customer is an important step in the marketing process, retaining the customer by improving service performance requires more attention (Baran et al., 2008).

There are several areas in the theoretical and empirical literature that characterize CRM with its origin from relationship marketing as well as its close connection with technology (Zineldin, 2005; Zineldin, 2006). CRM’s key infrastructures include data warehouse, internet, business process management or management tools, as well as interfaces such as Enterprise Resource Planning (ERP) systems which work together to create a long term profitable relationship between companies and their customers (Chan & Popovich, 2003; Thomson, Knox & Maklan, 2009; Xu, Yen, Lin & Chou, 2002). Technology therefore plays an important role in this process of creating and sustaining long term relations by companies with their customers.

1.1.1 Customer Relationship Management and Technology

Technology refers to the making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems, and methods of organization, in order to solve a problem, improve a pre-existing solution to a problem, achieve a goal, handle an applied input/output relation or perform a specific function (Bull, 2003). It can also refer to the collection of such tools, including machinery, modifications, arrangements and procedures. Technology has contributed
the bigger percent in CRM since it enhances the implementation of CRM. Curry and Kkolou, (2004) thus conclude that CRM is a concept that is technology oriented. The increasing use of digital technologies such as internet is changing what is expected in terms of customers’ management. CRM applications take advantage of computerized technological innovations to collect data, analyze data, interpret customer behavior, and develop productive models that respond on time with customized communication to deliver solutions to customer needs (Chan & Popovich, 2003). Computerized technology has enabled data sharing, automation and management of information in a way that has facilitated marketers to better understand customer preferences, buying behaviors and develop marketing mix based responses that are suited to the customers’ requirements.

Data sharing has been recognized as very crucial input in day to day activities and operations of organizations in the modern times because there are various conversations that take place in the organization in the course of product or service delivery, bringing together multiple participants involving the organization, its distributors and clients. The participants are in most cases in different locations or in different departments within the same organization. For example, when the prospect to a purchase intention is an existing account holder in a complex sales environment, the conversation might consist of the following interactions: Field-based salesperson and prospect’s commercial decision makers, salesperson’s sales coordinator and prospect’s executive assistants, project leader and prospect’s engineering team, and customer service team and a prospect’s operational people (Buttle, 2009).
Even though the availability of data is a necessary condition for the synchronization of the business interactions into a single conversation, it may not be adequate for users to make decisions. Sufficiency requires that each participant in this conversation is presented only with relevant data and that this data is presented in a meaningful way. CRM as a combination of strategies and technology tends to integrate both internal and external activities of the organization as it works through systems which include data warehouse, customers’ service systems, web marketing and operation systems (Egan, 2008). For this reason, at the heart of the CRM is a giant database, which makes the sharing of data quite easy. In addition, CRM also makes it possible to provide different people in the organization with custom views of the central dataset.

The relevant dimensions of technology applicable in CRM include; automation, functionality, acceptance by users and integration (Xu, Yen, Lin & Chou, 2002). Automation involves the use of systems for operating equipment such as machinery or processes in companies with minimal human intervention or with no human intervention at all. Functionality is the ability of a particular technology to cater for the needs of the users, in other words functionality is when technology has a useful purpose to users and can perform well the activities intended. Acceptance by users refers to the willingness of users to believe that the technology in application is working according to their needs. Integration is the ability of the technology to combine processes and systems to give out the desired results as intended to accomplish by the company. Venkatesh, Morris, Davis, and Davis, (2003) using the Unified Theory of Acceptance and Use of Technology, proposed four key constructs of performance expectancy, effort expectancy, social influence and facilitating conditions as complementary aspects of the four
dimensions of technology. The performance expectancy explains the degree to which an individual user believes that using technology in place will help in improving performance; and therefore an organization will opt to use technology that is perceived to meet its functionality. Effort expectancy on the other hand explains the degree of ease a user feels with respect to use of technology, and this implies that an organization will adopt the kind of technology that its users will accept, in terms of simplicity when using and with minimal human intervention and thus corresponds to the dimension of automation. Social influence is defined as the degree to which an individual user (believes in the use of technology) perceives that important others believe he/she should use technology, and this basically explains that an organization will go for the technology that can be used not only by one department in an organization but all the departments within the organization and is closely associated with the dimension of integration of technology with other functions. Lastly, Venkatesh et al., (2003) presented facilitating conditions as the degree to which an organization believes that organizational and technical structures exist to support the use of technology.

On the basis of these dimensions of technology, an organization will first install into its work systems appropriate information based technology system for all its operations. Functional areas then customize from this system so that each function is enabled to perform its unique activities and satisfy the structural roles expected from the design of the organization. In the case of the function of marketing, marketers will be expected to generate and sustain demand for an organization’s range of products or services. In order to do this, marketers will require a customized information based technology system to capture information on customers’ needs, buying behaviors and expenditures on the organization’s products and services. This is the role
expected for the organization’s CRM Program to play as enabled by the technology in use by each organization. Thus CRM Programs are established on the platform of an organization's general technology (Xu et al, 2002).

1.1.2. Customer Relationship Management, Technology and Service Quality

CRM Programs depend on the technology embraced in an organization to support the basic concern of marketers for ensuring delivery of quality to the market. In most cases, the CRM programs come at the stage of customer service to enhance customer care that offers potential to strengthen relationships with existing customers. The technology based CRM relationships impact an organization’s customer service activities and will manifest through the dimensions of service quality (Zineldin, 2006). Service quality has been described as an assessment of how well a delivered service conforms to the client's expectations. Service business operators often assess the service quality provided to their customers in order to improve their service, to quickly identify problems, and to better assess client satisfaction.

There are several features defining the service quality which are drawn from the nature of services (Kotler & Armstrong, 1999, 2006, 2012). These features include perishability, intangibility, variability and inseparability. Perishability of services reflect the fact that services cannot be stored in inventory as tangible products can, for instance a vacant hotel room is a lost service opportunity. In the case of Intangibility, unlike products, services cannot be touched, felt or tried out by buyers before purchase and there is no exchange of ownership from buyer to seller. Services vary due to the labor-intensive nature in service business; because the activities of personnel ultimately determine the quality of the service. Services cannot be separated from
the service provider, and services are consumed at the time they are produced, therefore, the service provider generates and renders the service to the consumer as per consumer needs (Semenik et al., 1995; Wolak et al., 1998).

Although the best judge of the quality of service rendered will always remain to be the user as the value expectations are also given by the user, it remains the responsibility of the service provider to assess the gap between customer expectations and the service providers’ performance level and fill the gap to the best possible extent (Kapoor et al., 2011). The assessments may vary with industry, product or service. There are indications that the adopted service quality models need to be assessed along the diversity of industries and the products or services especially those newly emerging service oriented sectors (Seth & Deshmukh, 2005; Agyei & Kilika, 2013). One of these sectors is the telecommunication industry.

1.1.3. Telecommunications Industry

Recent global trends have raised the need for communication to become a paramount and unavoidable aspect of both business and social life. Telecommunications industry facilitates this by providing data, internet, voice services, graphics, television and video at increasing speed and through diverse channels (Gupta, 2008). The telecommunications sector in most economies is characterized by high entry and exit barriers due to high initial investment cost and government rules and regulations. It is also characterized by skilled labor, high capital requirement, new technologies and new services. The market for this industry includes individual customers, small businesses and large corporate customers including governments and government bodies.
Individual customers are price sensitive whereas corporate customers are not price sensitive as they are willing to pay a premium price for the quality and reliability of voice services and data delivery. The industry is made up of both individual customers, and industrial clients in the categories of small businesses and large corporations. Most of these customers prefer advanced technology such as the use of wireless connections to computers just as it is with their mobile phones. Hence, the service providers in this industry adopt marketing mix factors differently for the purpose of differentiation due to stiff competition, focusing on all the 7Ps of product, price, place, promotion, people, physical evidence and process (Stallings, 2004).

A key feature of the industry is that it is a highly technology dependent sector. One of the trends that characterize the hi-tech industries is high degree of turbulence which may come from several fronts. Scholars in marketing identify particular technological trends with potential for turbulence as unlimited opportunities for innovation, emergence of new industries and the growing challenge to privacy (Hanson & Kalyanam, 2007). These raise challenges for industry operators to create platforms for customer service support that will give quality assurance to highly demanding customers for services produced in this sector. As it may be expected in turbulent environments, customer retention may be a challenge to marketers especially if there are no concrete systems for recording and tracking customer buying behaviors, needs, preferences and tastes over time for their long term retention in the business. CRM based on modern technology needs to play an increased role in supporting marketing activities aimed at long term customer retention. Marketing scholars therefore remain with a responsibility to
demonstrate the empirical links between the technology based CRM, service quality, and long term customer retention.

1.1.4 The Mobile Telecommunications Sector in Tanzania

Tanzania is the second largest telecoms market in East Africa, after Kenya. By September 2012, Tanzania had attained a subscriber base of more that 16.2 million people. The telecoms industry features four companies namely Airtel, Vodacom, Zantel and Tigo. All of these companies are in fierce competition while at the same time the entire sector remains open for new entrants from both within and outside Tanzania (Mkono & Kapinga 2014). Tanzania government has entirely embraced the principles of competition, privatization and amendments of the legal and regulatory framework so as to speed up both economic and social developments.

According to Mkono and Kapinga (2014), the industry regulatory body, Tanzania Communication Regulatory Authority (TCRA) is mandated to promote competition and economic efficiency, protect consumer interests, grant licenses and enforce license conditions, regulate tariffs and monitor performance. This has made the telecommunications industry to be one of the most liberal sectors in Africa. Given the dynamic nature of telecoms sector policies, legal provisions and regulations are regularly reviewed to accommodate new services such as mobile money and mobile banking within a dynamic business environment.

Comparing Tanzania with other countries in the East African region, the Tanzanian sector may be the least studied because there is limited research and development according to Materu and Diyamett, (2010) and Balasubramanian and Drake (2014). The findings of the study by Materu
and Diyamett done in 2010 provide a glimpse of the situation prevailing in the country on the state of the telecommunications sector. First, the study established that the general public lacks awareness on the developments in the telecoms sector and its potential contribution to national development and thus raised the need for stakeholders to provide education on the telecoms sector development. Second, it established that there is limited research and development (R&D) on this sector, and as a result telecoms usage data and statistics are not regularly collected, and thus called for research and development activities for supporting sustained growth and development of the sector.

Thirdly, it established that there is low customer service in the sector and therefore, they raised the need for quality improvement and customer support. Fourthly, the research observed that there is poor quality due to substandard handsets and imitation, and called on mobile phone operators to help ensure quality control through the sale of low cost but quality handsets. Lastly, the research found that there is weakness of time based internet access charge models, and raised the need for reviewing the internet charge models. The previous studies on telecommunications industry have not provided enough explanation to describe the prevailing situation in terms of the level of service quality offered in telecommunication industry in Tanzania. This study therefore, attempts to provide some explanation to describe the level of service quality under the given level of technology based CRM systems installed by mobile phone operators.
1.2 Statement of the Problem

Even though the telecommunication industry in Africa is projected to be one of the drivers of economic growth and development in most of the countries, little has been documented about the situation in Tanzania. Some of the reported cases on the situation indicate that even though the subscriber base to mobile phone services stands at slightly over 26 million, there is evidence of poor quality of services as well as essential electronic devices used in the telecommunications industry. The current move taken by the EAC member states to integrate the economies for enhanced trade among the countries involving both companies and their customers raises the need for the mobile telecoms industry to benchmark with those of the more advanced member states in Kenya, Uganda and Rwanda. Research is therefore required to demonstrate the links between technology based CRM and service quality in Tanzania due to the fact that previous research indicates that there is a need to enhance the CRM programs in telecoms industry in Tanzania so as to improve the service quality levels (Materu & Dayamett, 2010). The required research needs to apply service quality models to relate the various dimensions of service quality with the technology based CRM in the context of the operating environments of the mobile phone companies in Tanzania.

In spite of the above call for research on aspects of service quality in the technology dependent mobile sector in Tanzania, researches done in other parts of the world seem to be insufficient in offering guidelines on how to conceptualize CRM and service quality in the country. Previous researches have not integrated the three concepts of Technology, CRM and Service Quality Management in a single empirical investigation in order to explain their behavior and
relationship. The researches have however raised the need for the integration of concepts connected with quality management in technology based CRM research. The previous researches have focused on three streams namely: assessing the role of CRM in relationship management (Maklan & Knox, 2008; Thomson et al, 2009; Bull, 2003; Renartz et al, 2004), integration of CRM with quality management (Maklan & Knox, 2007; Curry & Kkolou, 2004; Zineldin, 2005; Smith 2010; Mele, 2007) and identification of areas of complementarity between CRM and technology (Richard et al, 2007).

Those researches focusing on the role of CRM in relationship management have found that CRM is vital in building the relationship between customers and the company, which in turn determines the profitability of the company (Maklan & Knox, 2008; Thomson et al, 2009; Bull, 2003; Renartz et al, 2004). Those focusing on the integration of CRM with quality management have found that CRM alone cannot bring customer value but it has to be integrated well with the related marketing functions and quality in order to give out the maximum of the desired results (Maklan & Knox, 2007; Curry & Kkolou, 2004; Zineldin, 2005; Smith 2010; Mele, 2007). The last stream on the complementarity between CRM and technology has found that technology is an enabler of CRM, since it improves customer relationship by centralizing information and data and provides timely and accurate information to customers (Richard et al, 2007). In addition, several studies done on CRM and aspects of Technology aimed at evaluating the contribution of Technology to effective CRM have shown that implementation of CRM largely depends on the state of Technology and that the Technology and CRM are statistically related (Bhatt & Emdad, 2010; Salo, 2012; Peter et al, 2009; Sinisalo et al, 2007; Kkolou et al, 2004).
In theory and practice, organizations design their Technology based CRM programs in order to enhance their customer relationship management activities whose effectiveness is manifested through the dimensions of service quality (Parasuraman et al, 1985). In spite of this, it is clear that these previous researches have only considered CRM and Technology without relating it to the area of service quality (Bhatt & Emdad, 2010; Salo, 2012).

The purpose of this study was to investigate the effect of technology based CRM on Service Quality in the telecommunications industry in Arusha, Tanzania.

1.3 Research Objectives

1.3.1 Main Objective

To establish the effect of Technology based CRM on Service Quality in the Telecommunications Industry in Arusha, Tanzania.

1.3.2 Specific objectives

i. To assess the effect of CRM System Automation on Service Quality in the Telecommunications Industry in Arusha.

ii. To examine the effect of CRM System Functionality on Service Quality in the Telecommunications Industry in Arusha.

iii. To establish the effect of CRM System User Acceptance on Service Quality in the Telecommunications Industry in Arusha.

iv. To establish the effect of CRM System Integration on Service Quality in the Telecommunications Industry in Arusha.
v. To determine the moderating effect of Micro Environment factors on the relationship between Technology Based CRM and Service Quality in the Telecommunications Industry in Arusha.

1.4 Hypotheses

H₀₁: There is no relationship between CRM System Automation and Service Quality in Telecommunications industry in Arusha.

H₀₂: There is no relationship between CRM System Functionality and Service Quality in Telecommunications industry in Arusha.

H₀₃: There is no relationship between CRM System User Acceptance and Service Quality in Telecommunications industry in Arusha.

H₀₄: There is no relationship between CRM System Integration and Service Quality in Telecommunications industry in Arusha.

H₀₅: There is no effect of Micro Environment factors on the relationship between Technology Based CRM and Service Quality in Telecommunications industry in Arusha.

1.5 Significance of the Study

The findings of the study are relevant in several ways. First, the findings of the study have contributed to an understanding in the area of marketing on how to integrate the various theoretical models of technology based CRM, service quality and micro environment factors. So far, models developed have been applied separately in empirical research. The findings responded to calls by researchers and theorists in marketing for an integrated framework in
relationship marketing for supporting customer service. Future research will benefit because the findings of this study have pointed at appropriate research themes in marketing.

The second area of contribution is on marketing practice where by the findings have showed how customer satisfaction can be attained, which in turn helps to achieve customer retention. Management of Telecommunications companies now have more to learn on how technology based CRM relates to service quality which is a key success factor for companies in a competitive environment. Hence, companies can confidently acquire better technology to enhance profitable relationships with customers. Also, the findings of the study may be used by Scholars and students in marketing for generalizations necessary in the review of literature as a requirement for advanced studies in the areas of their specialization.

Thirdly, the findings of the study have presented some information to cover some of the research gaps from the previous studies and enable scholars to gain more understanding on the concerned topic. Also the findings of the study have given more insight on the relationships between technology based CRM, service quality and micro environmental factors and how these relationships impact overall performance of the service based industries. Also, this study has added on the number of studies done in telecommunications industry in Tanzania.

Lastly, the study offers recommendations for service based companies to consider in the formulation of polices that will allow integration of demographic characteristics in choosing the system users, investment in business integration systems that will support integration of
technology based CRM with other business activities and formulation of strategies that will enable companies to adapt to the external dynamic environment.

1.6 Scope of the Study

The study was based on the three variables namely, technology based CRM, service quality and micro environment factors. On micro environmental factors, the study focused on the aspects of suppliers that supply inputs to Mobile phone companies and competitors of the companies. On technology based CRM, there are four components which are system automation, customer system functionality, system user acceptance and system integration. Finally, on service quality, five dimensions of service quality were assessed, namely, tangibility, reliability, responsiveness, assurance and empathy. Information for the study was collected from the stakeholders in the telecommunication companies who were managers, distributors and customers, with a total population of 26,514,895.

The study covered Arusha city where data was collected. Arusha is a city in northern Tanzania, and it is among the five cities in Tanzania, with a projected population of 1,288,088 according to the 2007 census report. The main economic activities include agriculture, tourism and mining. However, Arusha is a major international diplomatic hub. The city hosts and is regarded as the de facto capital of the East African Community. Since 1994, the city has also hosted the International Criminal Tribunal for Rwanda.
1.7 Limitations of the Study

The researcher encountered some limitations, such as some of the questionnaires were not returned and others not filled at all. Delayed feedback from the respondents was another limitation due to stretched working schedules of employees and managers particularly on the telecommunications companies which serve more than million customers; this resulted into the limited time for going through questionnaires. However, the researcher obtained management support prior to data collection by being clear to them on what exactly was needed and the importance of the study not only to the researcher and scholars but also to the telecommunications industry at large, therefore respondents saw the meaning in the whole exercise and responded optimistically.

1.8 Organization of the Thesis

This thesis is organized into five main chapters. The first three chapters address the subject matter of the proposal. Before chapter one, there are preliminary pages that contain declaration, table of content, and acknowledgement. Chapter one of the thesis provides an introduction of the study, whereby the background, theoretical and contextual information that leads to the problem formulation. The chapter also presents the research objectives and hypotheses. The second chapter focuses on literature review. The contents of the chapter focus on relevant theories, relevant conceptual and empirical discussions leading to identification of research gaps. The chapter ends by presenting the conceptual framework showing the research variables and their hypothesized relationships.
The third chapter of the thesis presents the methodology adopted by the study. The chapter explains the target population, the sample size, and the relevant tool used to collect data from the sample size. Also, the data analysis methods are discussed. The fourth chapter presents the findings of the study, including biographic information, descriptive analysis and tests of hypotheses. The chapter five consists of summary, conclusions and recommendations.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction
In this chapter, the researcher presents a summarized review of both theoretical and empirical literature. The areas reviewed include relevant theories, concepts and previous studies or researches.

2.2 Theoretical Review
In theoretical review, theories and models informing the variables of the study (technology based CRM and service quality) are discussed in detail. Reviewing the theories on the variables was considered important because it gave more insight on the concepts in terms of their nature and how they function when they are in an empirical relationship. This theoretical review is presented in three categories. Category 1 presents Technology based CRM model, which is Information Technology (IT) based model. The study used the IT based model as the main theory to guide the conceptualization and hypotheses development. The theory is also supported by Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT). Category 2 presents the CRM based model which is CRM pyramid model and it is supported by IDIC model. Lastly category 3 presents Service quality based model (SERVQUAL model).

2.2.1 Information Technology (IT) based Model
The main theory that guides this study is the information technology based model. This model highlights the importance of information technology (IT)-based service options among service providers who are using IT to reduce costs and create value-added services for their customers. It
proposes a service quality model that links customer perceived IT-based service options to the traditional service dimensions (Zhu, Wymer & Chen 2002). The model attempts to explain the relationship between IT-based services and customers’ perceptions of service quality. The model focuses on the linkages among the service dimensions as measured by SERVQUAL model, the constructs representing the IT-based service quality, preferences towards traditional services, experiences in using IT-based services, and perceived IT policies. The impacts of these constructs on perceived service quality and customer satisfaction are also specified. The model is illustrated in figure 2.1.

Figure 2.1: Information Technology-Based Service Quality Model
Source: Zhu et al. (2002)

The model proposes a three stage process to enhance service quality and attain customer satisfaction. In the first stage of the process, there are three components of preference towards
traditional services, experiences in using IT based services and perceived IT policy. Each of these three components has several indicators that stretch from the demographic aspects of the individual user through the state of psychological comfort in using the IT system to those of institutional facilitation in IT use in an organization.

Stage two of the model reflects the intermediate condition created by the components of stage one as the three combine to create a platform for enhancing service quality. The intermediate condition created is based on perceived IT based services, perceived reliability, responsiveness and assurance and perceived empathy. These four lead to perceived service quality which in turn results in customer satisfaction. Therefore, this model provides an insight on how information technology can contribute to service quality in a service based industries (Zhu et al., 2002).

The model is closely connected to the independent and dependent variables of the study. For the case of independent variables, the model offers the explanation on IT user experience, comfort and the personal intention of using IT based services. Whereas on dependent variable, the model has explained the indicators of service quality, that includes perceived reliability, responsiveness, assurance and empathy that in turn determine the customer satisfaction level (Zhu et al., 2002).

Even though the model attempts to link technology with service quality and customer satisfaction, it has some inherent weakness in that it does not demonstrate how technological attributes give rise to this service quality. In response to this limitation, other scholars have provided complimentary theories to address these weaknesses through the Technology
Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT)

2.2.2 Technology Acceptance Model (TAM)

The TAM is an information systems theory that models how users come to accept and use technology. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably: Perceived usefulness (PU) which was defined by Davis (1986) as the degree to which a person believes that using a particular system would enhance his or her job performance; and Perceived ease-of-use (PEOU) was defined as the degree to which a person believes that using a particular system would be free from effort (Davis, Bagozzi & Warshaw, 1989).

According to Davis, the attitude of an individual is not the only factor that determines his use of a system, but is also based on the impact which it may have on his performance. Therefore, even if an employee does not welcome an information system, the probability that he will use it is high if he perceives that the system will improve his performance at work. Besides, the Technology Acceptance Model hypothesizes a direct link between perceived usefulness and perceived ease of use. With two systems offering the same features, a user will find more useful the one that he finds easier to use (Dillon & Morris, 1996).

The elements of this theory are considered paramount in this study because they explain what an organization will look at when adopting technology. A company will adopt the kind of technology which can meet the requirements of the organization in terms of functionality, technology that can be easily used by the employees. At the same time, the technology adopted
should have an ability to integrate with other functions in the organization, and this should be automated so as to save time and money since organizations operate to maximize profit and minimize the operation costs. Also this theory provides the theoretical evidence on the relationships that exist between usefulness, ease of use and system use. TAM is depicted in figure 2.2.

Figure: 2.2 Technology Acceptance Model
Source: Davis, Bagozzi, & Warshaw (1989)

According to Davis (1986) perceived ease of use also influences in a significant way the attitude of an individual through two main mechanisms: self-efficacy and instrumentality. Self-efficacy is a concept developed by Bandura (1982) which explains that the more a system is easy to use, the greater should be the user’s sense of efficacy. Moreover, a tool that is easy to use will make the user feel that he or she has a control over what he or she is doing. Perceived ease of use can also contribute in an instrumental way in improving a person’s performance. Due to the fact that the user will have to deploy less effort with a tool that is easy to use, he will be able to spare efforts to accomplish other tasks (Davis, 1986). This theory supports the independent variables of this study by providing evidence that perceived ease of use (user acceptance) and the perceived usefulness (functionality) of the systems installed influence users to accept the CRM system put in the organizations for the purpose of improving the level of service quality since workers will only accept systems that can be applied with less or without difficulties.
2.2.3 Unified Theory of Acceptance and Use of Technology (UTAUT)

The UTAUT Theory was formulated by Venkatesh, Morris, Davis and Davis, (2003). The theory aims at explaining the user intentions to use an information system and subsequent usage behavior. The theory was developed through a review and consolidation of the constructs of eight models that earlier research had employed to explain information systems usage behavior (theory of reasoned action, technology acceptance model, motivational model, theory of planned behavior, a combined theory of planned behavior/technology acceptance model, model of personal computer use, diffusion of innovations theory, and social cognition). The components of UTAUT theory are shown in figure 2.3.

![Figure 2.3 Unified Theory of Acceptance and Use of Technology](image)


This theory has four key constructs namely, performance expectancy, effort expectancy, social influence and facilitating conditions. The first three constructs are direct determinants of usage
intentions and behavior and the fourth one is the direct determinant of use behavior. Performance expectancy is the degree to which an individual believes that using the technology will help him or her to attain gains in job performance. Performance expectancy was found to be the most influential among all the UTAUT components in predicting behavioral intentions and remain significant at all point of measurements regardless of environmental settings. Effort expectancy is defined as the degree of ease associated with the use of the system. Social influence is defined as the degree to which an individual perceives that important others believe he or she should use the new system where as facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system (Venkatesh et al., 2003).

From the figure 2.3, gender, age, experience and voluntariness of use moderate the impact of the constructs on usage intention and behavior. This theory operationalizes technology into four dimensions, which are automation, functionality, user acceptance and integration of technology with other functions. Performance expectancy explains the degree to which an individual believes that using the technology will help him to attain gains in job performance, which clearly shows that technology is chosen only if it can perform well the functions intended (Venkatesh et al., 2003 7 & Sykes, Vankatesh & Gosain, 2009). Effort expectancy explains the degree of ease associated with the use of the system, the user will accept the technology that is easy to use with effortless and also user will accept technology that automate activities so as to save cost and time. Since this technology based models attribute success in service quality and customer satisfaction to technology, this study considered it suitable to provide the relevant theoretical
perspectives to the concepts of service quality and customer relationship management. This theory demonstrates the technology based CRM dimensions used in this study; these dimensions are CRM system automation, CRM system functionality, CRM system user acceptance and CRM system user integration. These four dimensions of technology based CRM influence behavioral intentions and user behavior within organizations which in turn determine the level of service quality offered.

2.2.4 The CRM Pyramid Model

This model is based on the principles of the marketing philosophy that seeks to entrench a customer focus orientation and culture in organizations. This model states that customers and their needs should be given first priority and should be the central focus of the organization. Then products or services offered to customers should cater for their needs: and this is possible by blending well the marketing mix strategies, and adopting an appropriate marketing orientation. To achieve this, an organization requires a strong backing of an appropriate technology. The model presents CRM as a philosophy that is supported and enhanced by technology because through technology, relationships can be built and pieces of information integrated for use in decision making to nurture and retain these relationships. The information obtained from the CRM systems can help a company make the right decisions and be ahead of its competitors (Lucas, 2005). Figure 2.4 presents the CRM pyramid model.
From the figure 2.4, the CRM pyramid model justifies the reasons as to why the researcher used it to explain the variables. Technology is at the base of the pyramid which is the starting point of the pyramid, it creates a base that offers support of other functions in the organization. Technology acts as a central pole that connects and supports marketing activities in the company. With the appropriate technology, marketing and sales functions are well supported by ensuring that there are accurate and timely information to make right decisions concerning the market.

Moreover, technology together with marketing and sales support provide the basis for well tailored products and services that satisfy customers’ needs and in turn this creates customer satisfaction where by customers’ expectations are met (Chikweche & Fletches, 2013). This model shows a strong link between CRM and technology since CRM alone is not enough to fulfill its core objective of managing customers’ relationships without the presence of technology particularly in industries that serve a big number of customers at once like telecommunications industry. Therefore, in creating the espoused customer focus orientation, CRM attempts to carry
out several activities that will enable organizations to provide customized offers to clients. The CRM Pyramid model has been used alongside the IDIC model.

The IDIC model (Identify, Differentiate, Interact and Customize) suggests that companies should take four actions in order to build closer one to one relationships with customers (Buttle, 2009). According to Buttle, (2009), the steps are followed in the order: identification of customers, differentiation, interaction and customization. In the identification action, a company has to identify who their customers are and build a deep understanding of them in terms of their behavior, needs and wants. Under differentiation, a company has to differentiate their customers by identifying which customers have most value and who offer most for the future, since the focus of business is not only about the present but also about the future. Under Interaction, a company has to interact with customers to ensure that customers’ expectations are well understood. Also it is important to understand in terms of other relationships they have with other suppliers or brands. For the Customization action, a company has to customize offers and communications to ensure that expectations of customers are met.

This model was considered to be important to this study, since it explains the steps that organizations should follow in creating the relationship with customers which in turn can yield customer satisfaction (Lucas, 2005). In the first two steps of identifying and differentiating customers, organizations need appropriate technology based CRM systems to collect and sort out the information; this can mainly be done through customer database systems particularly in companies that have a huge number of customers like in mobile phone companies. In the last two
steps, that is interacting with customers and customizing the products and services requires a room whereby customers will be free to give out their views and feedback as far as products and services are concerned, and this is possible through company’s website and email systems. In a nutshell, for a company to attain a profitable relationship that will also result to customer satisfaction, technology based CRM systems play a fundamental role in enhancing that. The model offers explanation on how the independent variables of the study can be used as a philosophy in building and enhancing relationships between companies and their customers in order to promote customer satisfaction. Thus, the model articulates the influence of technology based CRM in building relationships through identifying customers, differentiating them, interacting with them and customizing the company offers to satisfy customers’ needs, this is revealed through the level of service quality offered by the company.

2.2.5 SERVQUAL Model

The servqual model has been recognized as the most eminent instrument in attempting to systematize the concept of service quality. This model is also known as the gap model of service. The model was developed initially to measure customer perception of service quality for the financial service sectors but later extended to sectors such as hospitality and telecommunications (Parasuraman et al, 1985). This model explains the five dimensions of service quality and the five gaps that organizations should measure, manage and minimize to ensure maximum satisfaction of customers. Each of the five Service Quality Dimensions makes an extra addition to the level and quality of service which the company offers to their customers. It also makes the service far more unique and satisfying. The five dimensions are tangibility, responsiveness, reliability, assurance and empathy.
Tangibility refers to the physical evidence of a service such as physical facilities for example offices, equipment, personnel and communication materials. Responsiveness is the willingness and readiness of the organization staff to provide services needed by customers. Reliability refers to consistency, accuracy and dependability of the service provider’s performance where as assurance is the ability of conveying confidence and trust to the customers by the service provider, lastly, empathy involves the efforts of a service provider to understand customers’ needs and individualized service delivery (Boone & Kurtz, 1998).

Even though a Servqual research done to rate each of the dimensions out of 100 showed varying degrees of the relative importance of the dimensions, it has been concluded that all the dimensions are important and that service providers need to focus on all of them (Berry & Parasuraman, 1991). By use of all the dimensions, organizations are able to address the various customer service gaps likely to emerge in a typical service encounter. Figure 2.5 summarizes these gaps.
Figure: 2.5: Gap Model of Service Quality

Gap 1, is the gap between what the customer expects and what the company’s management thinks customers expect. It indicates a problem with the understanding of the market. The following might cause this gap, insufficient marketing research, poor interpretation on the information about the audience's expectations, research not focused on demand quality and too many layers between the front line personnel and the top level management (Parasuraman, Berry, & Zeihaml, 1991).

Gap 2, is the gap that occurs when management fails to design service standards that meet customer expectations. The gap can occur due to the following reasons; insufficient planning procedures, lack of management commitment, unclear or ambiguous service design and
unsystematic new service development process. Gap 3, occurs when the company’s service delivery systems (people, technology and processes) fail to deliver to the specified standard. The following are the reasons for this gap to occur; deficiencies in human resource policies such as ineffective recruitment, role ambiguity, role conflict, improper evaluation and compensation system, ineffective internal marketing, failure to match demand and supply and lack of proper customer education and training (Parasuraman, Berry, & Zeihaml, 1988).

Gap 4, occurs when the company’s communications with customers promise a level of service performance that people, technology and processes cannot deliver. This gap may occur due to over-promising in external communication campaign, failure to manage customer expectations and failure to perform according to specifications. Gap 5, is the difference between customer's perception of the experience and the customer's expectation of the service.

The SERVQUAL model is linked with the dependent variable of the study. The model explains the right dimensions of service quality that can be used to measure the level of service quality offered to customers. All the dimensions are important since each dimension has a role to play in mitigating the five gaps on the gap model so as to ensure maximum satisfaction of customers.

2.3 Conceptual Review and Discussion

The conceptual part presents a discussion of the various concepts underlying the study based on technology based customer relationship management, service quality and micro environment factors.
2.3.1 Relationship Marketing

The concept of relationship marketing forms the basis for customer relationship management activities in organizations. The concept is at the heart of marketing whereby a key feature emphasized is that of creating and nurturing long term networks or relationships (Kotler & Armstrong, 2008). It has been acknowledged that the fundamental purpose of marketing is ‘acquiring and keeping customers’ but the reality is that more attention has been paid to attracting customers than to keeping them.

More recently there has emerged a recognition that marketing needs to encompass not only those activities necessary to capture customers in the first place, but also to develop processes that will enhance long term customer loyalty. This viewpoint is the foundation for the development of this concept of relationship marketing. This concept is based on the belief that the fundamental purpose of marketing is the creation and development of long term profitable relationships between organizations and customers. Therefore, relationship marketing is an augmentation and a refocusing of the marketing concept with the emphasis placed on strategies to enhance customers’ retention and loyalty (McDonald & Christopher, 2003).

Boone and Kurtz (2004) pointed that an organization practicing relationship marketing should focus on quality, customer service and marketing in enhancing customer satisfaction. Figure 6 illustrates the role of relationship marketing in attaining customers satisfaction through quality based customer service as an aspect of marketing.
The augmentation of relationship marketing has caused a shift of marketing from the traditional approach based on transactions to that on relationships. The transaction focus considers a single sale orientation in short term scale, discontinuing of customer contacts, focusing on products features only as little emphasis is given on customer service and quality is the concern of the production staff only, where as the relationship focus concentrates on retaining customers in long term scale through continuing customers’ contacts, customer value and involving all the staff in quality improvements (Boone & Kurtz, 2004).

In practice, the concept of relationship marketing translates into a process of increasing customer value by enhancing the value of relationships involved in creating and delivering that value. Customer Relationship Management is thus approached from this marketing foundation seeking to nurture long term relations with customers.
2.3.2 Customer Relationship Management (CRM)

CRM has no single definition, since it has been defined differently by different authors. There is however a common purpose across the definitions that CRM is concerned with creating, nurturing and maintaining profitable relationships between an organization and its customers. CRM can be defined as the combination of strategies and technologies that improve relationship programs, reorienting the entire organization to a concentrated focus on satisfying customers. The concept is made possible by technological advances, since it leverages technology as a means to manage customer relationships and integrate all stakeholders into a company’s product design and development, manufacturing, marketing, sales and customer service processes (Boone & Kurtz, 2004).

According to McDonald and Christopher, (2003) CRM is the methodology based on new information technology that helps companies reach their long held goals for improving customer satisfaction. CRM is also comprised of organization, processes and systems through which an organization manages its relationships with its customers. Buttle, (2009) considered CRM as the core business strategy that integrates internal processes and functions, and external networks, to create and deliver value to targeted customers at a profit. It is grounded on high quality customer – related data and enabled by information technology. This definition is similar to that of Kotler and Armstrong, (2006) who defined CRM as the overall data management activities and process of building and maintaining profitable customer relationships by delivering superior customer value and satisfaction.
According to Baran et al. (2008) and Buttle (2009), the origins of CRM are varied and diverse. There are many different views as to what led to the development CRM as it is known today. Most see the roots of CRM in the areas of relationship in the following areas namely relationship marketing, marketing research, B2B relationships, Materials resource planning and enterprise resource planning, Customer contact center, Sales force automation, Campaign management tools and Diffusion of personal computers and analytical CRM.

The first origin of CRM is Relationship marketing. Relationship marketing focuses on maintaining a continuous relationship with customers and build long term bonds, thus overtime a company will learn more about customer’s needs and wants and is therefore able to provide more personalized and relevant one to one services. Various forces drove marketers to build relationships, first being technological advances in IT that made relationship marketing feasible by enabling companies to record details from every transaction, second the large scale growth of direct marketing enabled more and more companies to enter into one to one relationships with their customers. Thirdly, marketers and academicians’ pointed that while acquiring a customer is the first step in the marketing process, yet retaining customer and improving service performance requires more attention (Chen & Popovich, 2003; Zineldin, 2005, 2000).

From the Marketing research stream, CRM had its origins in marketing research on customer satisfaction studies of the late 1970s, and its relationship with Total Quality Management (TQM) in the late 1980s. Even though according to Buttle, (2009) marketing researchers may have planted some of the seeds from which CRM grew, they had little to do with information
technologies that made CRM possible. From the B2B relationships perspective, many claim that B2B interaction between companies and their suppliers are origins of the B2C CRM models that are so prevalent in the market today. To mirror such relationships on a mass market basis however, it required advances in IT so that information from customers contact could be collected and updated on a real time basis.

Materials Resource Planning (MRP) and Enterprise Resource Planning (ERP) is another source of CRM; it is believed that in the mid 1980s, material resource planning was introduced and companies began to construct customer’s databases. In early 1990s, a company called SAP integrated traditional MRP functions with accounting, and customer data warehouses were established. Once this occurred, companies had the demographic, behavioral and contact data necessary for CRM (Solomon, 2000).

Customer contact center also laid a foundation for CRM. The domain of CRM has always been marketing in particular, customer service and sales. In the late 1980s, telemarketing technology was built into the customer call center (CCC). In the late 1990s, customer support applications were introduced as well. The first CRM initiatives were launched in the early 1990s and focused on improvements to the call centers. Also Sales force automation (SFA) contributed to the outset of CRM, this occurred when sales force automation tools were developed and introduced to improve the capture of customers and prospects information and provide the sales force with the real time information (Peppers and Rogers, 1999).
Campaign management tool is another origin of CRM. The CRM campaign management tools were introduced to contain the excessive costs associated with media buys for mass marketing promotional campaigns. Initial CRM campaign management techniques were based on customer list containing variables that companies could target for smaller and more focused promotional campaigns. Companies could plan, target, schedule, and measure responses to each campaign and modify future campaigns based on the results (Baran et al., 2008).

Furthermore, the web and channel integration also marked the beginning of CRM where by most of the CRM systems started as a point of solutions and satisfying the needs of a single department or function. Departments and functions used local databases, and none were linked. The data warehouse, a centralized cross functional database, was introduced to provide a single vision of the customer. Lastly, CRM had its origin from diffusion of personal computers and analytical CRM. The diffusion of personal computer meant every desktop had the capability to analyze customer data. This led to company divisions having the ability to manipulate their own customer data, develop their own marketing programs, assess their own performance, without regarding to what headquarters was doing (Buttle, 2009).

CRM programs in organizations are carried out to achieve several objectives. From the customers’ perspective, CRM system offers unified customer interface that delivers customization and personalization. This means that at each transaction, the relevant account details, knowledge of customer preference and past transactions, or history of a service problem are at the finger tips of the person servicing the customer. This can result in a vast service
improvement and increase customer value (Payne et al., 1999; Reichheld, 1996). From a company perspective, CRM systems allow the company to better understand, segment and tier its customer base, better target promotions and cross selling, and even implement churn alert systems that signal if the customer is in danger of defecting (Lovelock & Wirtz, 2007).

CRM is highly supported by three polls which are strategy, marketing and information technology. This clears the misconception that CRM is only about information technology but rather it integrates internal process and functions. The three elements are inseparable, and if one is missing then CRM will not work effectively and competitive advantage cannot be achieved (McDonald & Christopher, 2003). Information technology forms the backbone of CRM because the basic idea of CRM is to integrate these systems, that is, data warehouse, customer service systems, call centers, e-commerce, web marketing, operation systems such as order entry, invoicing, payments and point of sale, and sales systems in such a way that the organization is able to manage its customers flawlessly. Through technology, CRM systems are about making sense of the vast amounts of customer data that organization collects. This indicates that CRM is a technology-enabled approach to management of the customers’ interface (Buttle, 2009; Egan, 2008).

A successful CRM System therefore needs to demonstrate several characteristics. According to Boone and Kurtz (2004) and Dyche (2002), there are several qualities of the successful CRM systems touching on drive for results, investments in training and interdepartmental communication. A good CRM system is result driven. The major and core purpose is to attain
customer satisfaction by delivering superior value. However, specific goals and benefits such as
customer analysis, market segmentation and others are decided on before attempting to
implement CRM strategy. The implementation is done from top to the bottom, because the top
management and senior level executives must be committed to changing the firm to a new focus
on customers. The implementation is done by carefully managing target market activities,
modeling customer behavior and making follow ups on the customer marketing and service
history.

A good CRM system requires investment in training, which is vital since it is done to upgrade
the skills of employees so that they can be able to handle new processes and tools of CRM
systems. The training equips well and makes employees ready for the better implementations of
the CRM systems. Another quality of successful CRM system is that it communicates effectively
across the functions, which is across all the departments within an organization, and gives a
chance for team work to solve customers’ problems (Dyche, 2002).

A good CRM system is streamlined, that is concentrated focus on the customers that allow
organizations to weed out wasteful business practices. Streamlining also eliminates the need for
costly customization when it comes to creating software solutions. Also a good CRM system has
involvement of end users in the software solutions. A good CRM system considers the inputs
from employees, suppliers, distributors and any other partners who are the end users of the
system. It insures that the systems meet the needs of all those who will implement them and also
encourages anyone to support the transition to CRM. Lastly, CRM system constantly seeks
improvements by tracking and measuring results, so that organizations can be able to continually improve relationships with customers (Kurtz, 2004). The CRM System in organizations is established with its application resting on three components. Figure 2.7 illustrates CRM application components.

![Diagram of CRM application components](source: Havaldar (2010))

The first component is system automation. System automation involves sales force automation (SFA) and sales management (SM). These applications are to help the company acquire and retain customers, minimize time spent on administration work, get competitive information, use data process and sales forecasting methods. Technology based CRM consists of web sites that allow users to purchase and utilize customer-centric tools for automating and organizing customer service and support tasks directly through a web browser. This is enabled by the internet which provides an efficient way to find and share information. Advantages of this method include the CRM technology being readily available and relatively easy to use while a disadvantage lies with the use of the CRM technology being dependent on an Internet connection.
The internet has generated a great deal of hype and media attention by transporting vast amount of information at a very high speed (Chaffey et al., 2009). A description of the internet as a new way of business is offering a whole new way to establish rapport with customers. Answering customers’ questions, solving their problems and selling additional products can now be computerized in such a way that involves little human intervention. However with the presence of internet, online advertising, shopping and electronic magazines is possible, it also opens up the opportunity to find quality templates and framework for CRM (Barkley & Saylor, 2001). It is now possible for all companies to provide their customers’ push-button service without installing networks of machines, they can do it through World Wide Web (Zemke & Woods, 1999).

System functionality is another component in technology based CRM application which focuses on the system that yield the required features of a product and service to satisfy the customers’ needs. In companies, the marketing department is responsible for identifying customers’ needs and formulating strategies to fully satisfy the identified needs of customers. Companies install systems software such as web that provides templates for translating customers’ needs using quality function deployment, to analyze detailed customer requirements and design factors, and to make recommendations in product design development (Barkley & Saylor, 2001).

However the Web offers an additional means of creating the all-important bond of trust and loyalty between customers and organizations because organizations are using the web to sell products and services and give their customers another means of conducting business. The
rewards have brought about reduced customer service costs and higher customer satisfaction (Zemke & Woods, 1999).

The third component is system user acceptance that requires a company to install systems that are user friendly to both the internal customers and external customers. Since most businesses are technology dependent in some form of calculators, cash registers, telephones, computer systems and hand held personal planners, the internal users must be able to operate the systems and machines so as to be able to attain the desired outcome. In the 21st century, the development of science and technology is not avoidable not only to businesses but also to the society at large. The society has become twenty four seven society (people access technology twenty hours a day, seven days a week), therefore, this requires the companies to set up systems that can be easily understood and used by customers to meet their needs (Lucas, 2005).

The last component in CRM application is system integration. Technology based CRM should integrate important marketing activities such as need generation and follow up, web-based information, marketing segmentation, targeting and multi-channel operations and customer service and support (CSS) (Havaldar, 2010; Newell, 2000). Customer service and support consists of after sales services activities such as help desks, contacts and call centers and field service support. With the advancement in technology, especially the proliferation of self-service channels like the Web and smart phones, customers relationships are being managed electronically. The development of information technology has created a sophisticated customer service system that electronically identifies callers, assesses their account history and routes
priority customers to get the first class treatment in a short period of time (Berkowitz et al, 2000; Hanson & Kalyanam, 2007). Also, with the internet technology there has been development of customer interaction centers (CIC) or multi-media call centers that enable customers connect directly with the company to make inquiries so as to get the information they need about products and services.

According to McDonald and Christopher, (2003) and Donaldson and O’Toole, (2007) CRM has various benefits to an organization. CRM benefits a company through finding profitable prospects, identifying most profitable customers and serving them better by satisfying their needs, identifying the lifetime value of customers and reducing customer churn. Also, CRM helps companies in managing less profitable situations better by improving effectiveness of marketing communication and direct marketing, refining marketing strategy, improving customer service and reducing selling and marketing costs. Donaldson and O’Toole, (2007) pointed that CRM helps companies focus on internet based customer service links to the right customers so as to attain competitive advantage.

2.3.3 Service Quality

Service quality entails an assessment of how well a delivered service conforms to the expectations of the customer. Service on the other hand involves an intangible task that satisfies consumer or business user needs. In other words, a service can be defined as intangible activities or benefits that an organization provides to consumers such as airline trips, financial advice or automobile repair in exchange for money or something else of value (Gabbott & Hogg, 1997; Kerin et al., 2009). Services are significant components of the global economy and they have
several characteristics that distinguish them from products (Petter & Donnelly, 2001, 2007; Kotler & Armstrong, 2006; Egan, 2008; Hutt & Speh, 2007). It is crucial for service operators to well define these characteristics so as to be in a good position of assessing how well the services satisfy customer’s needs.

The first characteristic is intangibility. Services are intangible, and so unlike products, services cannot be touched, seen, tasted, heard or felt before they are consumed and they are always consumed at the time of production. Therefore, services do not have features that appeal to the customers and make them evaluate services, unlike goods, is not possible before actual purchase and consumption.

The second characteristic of services is service inseparability, services cannot be separated from the service provider. The production and consumption of services occur simultaneous, and the inseparability of production and consumption increases the importance of service quality. Service perishability and fluctuating demand is the third characteristic of services since services cannot be stored, that is, they are not provided at the time they are available, the loss of revenue cannot be captured; therefore the demand for services is often unpredictable and widely fluctuating. This calls on the service marketer to carefully evaluate capacity – in a service business, capacity is a substitute for inventory. If capacity is set for peak demand, a ‘service inventory’ must exist to supply the highest level of demand. An infinite capacity is set so that no single business traveler is dissatisfied. Obviously, setting high capacity levels is costly, and the
marketer must analyze the cost versus the lost revenue and customer goodwill that might result from maintaining lower capacity (Petter & Donnelly, 2001, 2007).

The fourth characteristic of service is that, there is a client-service provider relationship, where by the buyer views the seller as someone who has knowledge that is of value. Therefore, the buyer, many times abides to the advice offered or suggestions provided by the seller, and this relationship may be of an ongoing nature. There is a customer effort, this is because the service provider works with customers in delivering what exactly they need, for instance doctor – patient services, and hence there is higher involvement of customers; although not every service requires same degree of customer effort (Kotler & Armstrong, 2006).

The last feature of services is uniformity or variability, quality of services can vary, since most services are performed by humans and often customized to the needs of the customer, it is obvious that quality of service varies from one service to another. Since services are highly variable, the quality of the service output may vary each time it is provided. Services vary in the amount of equipments and labor used to provide them. Generally, the more labor involved in a service, the less uniform the output. In this labor – intense cases, the user may find it difficult to judge the quality before the service is provided. Because of uniformity problems, business service provider must focus on finely tuned quality control programs, invest in the systems to minimize human error, and seek approaches for automating the services (Egan, 2008).
From the service characteristics, service based industry can acknowledge how critical service support is to relationship marketing and quality because it is during pre-sale, selling time and after sale support that customers are approached as individuals. It is at that time that customers’ perceptions of quality will become apparent and the front line staff such as sales people who deal directly with customers are able either to adjust the customers’ expectations (pre-sale) or correct any problems with the product (after sale) (Blythe, 2006).

Quality is the relationship between what customers expect, and what they get. Perception of quality is closely related to customers’ views on what constitutes value for money. Quality is in the eyes of the beholder or at least in the perception of the customer and quality standards are ultimately defined by the customer, because each individual is starting with a different set of expectations. Actual performances by service provider or provider’s perception of quality are of little relevance compared with the customer’s perception. Thus, good service results when the service provider meets or exceeds the customer’s expectations (Hutt & Speh, 2007).

Quality can be defined in five different approaches according to Garvin, (1984). The first approach is the transcendent approach of philosophy. According to this approach, quality is both an absolute and universally recognizable and it is a mark of uncompromising standards and high achievement, thus quality is a simple unanalyzable property that can be learned through experience. The second approach is product based whereby quality is viewed as a precise and measurable variable; hence the quality of a product can be measured through its ingredients and attributes. The third approach is user based approach whereby quality is measured by customers
through customers’ satisfaction. The fourth approach is manufacturing approach which bases on supply side and primarily concerned with engineering and manufacturing practice, quality is simply “conformance to requirements”. And the last approach is value based whose perspective is that quality is defined in terms of costs and price. Therefore quality product or service is the one that provides the required performance at the acceptable price or conformance at an acceptable cost. Marketers mostly take user based approach and product based approach.

Quality must be integrated at all levels in the company, and for this to have meaning, marketing must also be integrated throughout the company and the company must define well its technological base in order to accurately interpret the capabilities of the organization in relation to customers’ requirements. This means designers must fully understand customers’ requirements which must in turn be translated in the production process with the final link being to produce the product/service when the customer wants it and at the right price (Lancaster & Reynolds, 1995).

Quality has several dimensions. There are eight dimensions of quality according to Garvin, (1984) namely, performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality. Some dimensions are closely related. Performance refers to the primary operating characteristics of a product. This dimension combines both product and user based approaches, thus, it involves measuring product attributes. Features, is another dimension which refers to the secondary characteristics that supplement the product’s basic functioning
such as drinks in the flight. The two dimensions are closely related, what distinguishes them is the degree of importance to the user (Garvin, 1984).

The third dimension is reliability, which refers to the probability of a product failing within a specified period of time; this requires a product to be in use for some period. The fourth dimension is conformance that reflects the degree to which a product’s design and operating characteristics match the pre established standards. It can be measured both internally and externally. Internally, the factory can measure the number of defects and externally, in the field it is difficult to collect data on conformance but mostly warranties are used. Reliability and conformance are both manufacturer based approach (Garvin, 1984). Durability is another dimension that measures product life cycle, it reflects the amount of use one gets from a product before it breaks down. Durability and reliability are closely linked because a product that fails frequently is likely to be scrapped earlier than the one which is reliable (Garvin, 1984).

Serviceability is the sixth dimension that can also be known as the speed, or courtesy and competence of repair. Serviceability of the service includes responsiveness, professionalism in service offering or repairing. The last two dimensions are aesthetics and perceived quality which are closely related and they are the most subjective dimensions. Aesthetics refers to how a product looks, feels, sounds, tastes or smell; that is obviously based on personal judgment and individual preferences, where as perceived quality involves how individuals understand and interpret product or service for example, product can be evaluated depending on the objective
According to Blythe, (2006) service quality is the ability of the organization to meet or exceed customers’ expectations. An understanding of customers is central to understanding service quality, although there has not been less agreement about how to operationalize service quality as a construct. Therefore, it becomes difficult to define and measure service quality (Gabbott & Hogg, 1997) and hence, results to difficulty for the marketing manager to determine how much to spend on improving service quality (Hutt & Speh, 2007). Service quality can be measured using various approaches one of which is the aspect of how a customer feels about the business, and the measurement system is supposed to be the Customer Perception Index (Baker, 1992). However the most common measure of service quality remains to be SERVQUAL model which has five constructs that measure service quality (Berry & Parasuraman, 1991). This study used SERVQUAL model to measure service quality.

2.3.4 The Micro Environment

The external environment of organizations is widely acknowledged in marketing due to its role in influencing selection of marketing strategies. CRM to some extent can be considered as a firm’s strategy for sustaining competitiveness in the market. This competitiveness may be manifested through the outcomes of the CRM programs, notably service quality that may lead to customer delight and satisfaction (Kotler & Keller, 2006, 2008). An important factor of the external environment in the micro context likely to influence the design of CRM programs as a strategy is the competitive factor. Marketers are occasionally advised to pay as much attention to
their competitors as they do their markets since the behavior of competitors will determine the kind of plans a marketing firm should adopt. The factor of competition has been explained using Porter’s five forces model (Kotler, 2000).

Porter’s five forces model was developed for assessing attractiveness of firms which will eventually determine the competitiveness of the firms. The model explains five factors which determine the firm’s competitive rivalry state. The five factors are, bargaining power of suppliers, bargaining power of buyers, threat of new entrants, threat of substitutes and competitive rivalry (Kotler & Keller, 2006). The four factors namely, bargaining power of suppliers, bargaining power of buyers, threat of new entrants and threat of substitutes determine the competitiveness of the firm. The independent and dependent variables of the study have considered aspects of buyers, substitutes and new entrants. Under the micro environment factor as the moderating variable of the study, competitive rivalry and suppliers bargaining power was considered (Stanton, Etzel & Walker, 2007).

For any organization to produce a product or service the inputs must be availed, and the inputs can be in form of raw materials, equipments, labor and finance. Suppliers are there to play this vital role of supplying organizations with what they need so as to produce products and services. Suppliers form an important link in the company’s overall customer value delivery systems, and their problems can seriously affect marketing activities of the company and overall costs of production when there is a rise of cost in supply inputs. Suppliers’ bargaining power increases
when they are concentrated or organized, when costs of switching suppliers are high, when there
are few substitutes and when the supplied product is an important input (Kerin et al., 2009).

Generally the power of suppliers can be influenced by a number of factors. These factors include
concentration of suppliers, high switching costs and supplier competition threat. Supplier are
concentrated or differentiated, if there are few (or one) supplier in the market, they will have
more power to influence since the organization has few or no alternative (Porter, 1998). In this
case the organization will have no choice rather than accepting what the supplier has to offer. If
the switching cost is higher, then organizations will be less likely to change the supplier, and in
this case organizations are bound to strengthen the relationship with the existing supplier(s)
(Kotler & Keller, 2006). In telecommunications industry, the mobile phone operators rely on
other manufacturers to supply the mobile phones handsets, micro chips and other accessories

Competitive rivalry is another factor under the micro environment. Competitive rivals are
organizations with similar products and services aimed at the same market segment. Organizations always strive so as to attain competitive advantage over their rivals. The competitive rivalry is influenced by competitor balance (size of the competitor), industry growth rate, high fixed costs, high exit barriers and low differentiation of marketing mix (Johnson, Scholes & Whittington, 2008). The intensity of rivalry among firms varies across industries, and
strategic analysts are interested in these differences, because it is the difference that will be used
to make marketing mix strategies and gain competitive advantage. The telecommunications
industry is among the industries with high intensity of rivalry due to segment rivalry
characterized by low products and services differentiation (Kotler & Keller, 2008). Thus, the competitive rivalry can influence organizations marketing mix activities either positively or negatively depending with the intensity of rivalry.

2.4 Empirical Review

A number of studies have been done on CRM. These studies can be categorized into four streams as follows: the role of CRM in relationship management; integration of CRM and quality management; CRM and technology complementarity; and studies on Telecommunication industry.

2.4.1 Studies on the Role of CRM in Relationship Management

Thompson et.al (2009) conducted a study that focused on developing relationship marketing through the implementation of customer relationship management technology. The research design used was that of a survey design and data was collected through a web based survey and interviews. Population of the study was drawn from Cranfield University and Computer Science Corporation (CSC). The findings indicated that most of the organizations were at an early stage of CRM development. The purpose of CRM implementation was to align corporate investment and management in order to deliver the greatest value to customers; this implies the change of focus from product/service to customers, whereby customers become the central focus.

In the CRM implementation process, many companies began with the key component which is data warehousing or customer service call centers. The most difficult stage in CRM implementation was on integration of the front office and back office, issues of culture, control
and information systems often arose, and made it difficult to attain a high level of integration. The researchers suggested that CRM development has to begin with a company audit of both internal and external environments so as to assess the readiness of a firm to develop and implement CRM systems. The researchers concluded that CRM implementation needs huge support from the company, and that companies that do not implement CRM systems to support relationship marketing strategies face the risk of losing since customers have started expecting added value through well tailored products and services.

Maklan and Knox (2008) on the other hand conducted their study based on the concept of dynamic capabilities as the missing link in CRM investment. The researchers used action research design and the population of the study included two car companies. Convenience sampling was used so as to collect the intended data from the identified population. The data was collected through questionnaires. The research found that both companies faced market place challenges because of lack of or little investment on CRM and that there was a need to integrate CRM resources with the way firms arranged and developed resources to deliver value.

The researchers explained that, the failure of CRM investment was often because most of the firms invest in marketing resources and give little attention to the development of dynamic capabilities that are important in investment success. However, marketing management can improve the CRM investment by making sure that managerial practices and organizational routines (culture) support marketing resources and that marketing managers should lead the process of building dynamic capabilities that is vital in supporting CRM investment. The
limitations of this study arose from the small sample used such that the results may not be
generalized. Therefore, further research is needed on developing scale measures of dynamic
capabilities to relate them with either CRM success or business performance.

Reinartz et al., (2004)’s research was focused on the CRM process, its measurement and impacts
on business performance. The research design used was cross-sectional survey, and the
population was drawn from three countries, namely Austria, Germany and Switzerland. The
sampling technique used was random sampling, and questionnaires were used as data collection
tools. The results showed that CRM implementation process was positively associated with
economic performance at all stages which are initiation, maintenance and termination, therefore,
when CRM is compatible with organizational alignment, then CRM process and economic
performance link at each stage of CRM. Also CRM technology was not necessarily linked to a
company’s ability to improve economic performance through CRM process.

The researchers pointed that there was a need of separating the three components of CRM
process (initiation, maintenance and termination) because performance may vary at each stage.
This implementation process was associated with better company performance in two of the
three stages; the strongest effect was on maintenance stage followed by initiation. For the CRM
implementation process to produce the desired results, proper organizational structure and
incentives are needed to be in place. Therefore, the research suggested that further studies should
be done to examine the factors that influence performance at each stage in details.
Bull, (2003)’s study was focused on strategic issues in CRM implementation. The research was
done as a Case study and the population included directors of sales and finance, marketing, IT
and Human Resource and logistics, field sales engineers and sales administrators of ELMS
Company. ELMS Limited is a small to medium sized UK manufacturing company. The
approach used in data collection was interview. The findings indicated that ELMS Company
lacked knowledge as far as CRM concept is concerned, and strategic managers had a basic
understanding of CRM. This company went for consultancy and decided to opt for CRM.

The first challenge ELMS faced in CRM implementation was team selection and after
implementation of CRM software other challenges occurred on operational and analytical level.
However, the software failed to integrate with other applications. This made ELMS change the
CRM systems and adopt the one that could be integrated with other enterprise applications. The
failure of ELMS CRM strategy was a result of an ineffective software tool and not learning from
early adopters. The author pointed that there is a need for companies to create a clear vision and
mission of a strategic direction of the CRM project and therefore, the findings led to the
conclusion that CRM is a holistic and complex strategy that involves business activities and IT
integration. Further research is needed to find out how organizations can implement CRM
successfully.

These findings from the stream focusing on assessing the role of CRM in relationship
management indicate that CRM investment is vital to any organization that operates in an
environment experiencing ever growing competition because of the need for survival and that
most of the organizations are at their early stage of CRM implementation. CRM implementation involves change in organizational culture and other internal operations which implies that there is need for change of focus from product/service to customers. CRM focuses on customers, and attention should be paid to their needs and wants and customize the needs and wants so as to provide what exactly is needed by customers. By so doing a company will be in a better position of satisfying customers. However, CRM is integrated with other functions within the organization in order to give the greatest value to customers by satisfying them (Maklan & Knox, 2008; Thomson et al., 2009; Bull, 2003; Reinart et al., 2004).

2.4.2 Studies on the Integration of CRM with Quality Management

Smith, (2010)’s study focused on strategic leveraging of total quality and CRM initiatives done as a case study of service oriented firms. The population included CCC Corporation, National City bank, Township municipality and employees. Convenience sampling was used and the data collected was analyzed using tables. In case one, the researcher found that CCC Corporation applied the TQM/CRM principle of continuous improvement. Employees worked together with their supervisors as a team in achieving cost reduction, sales growth and quality. CCC Corporation also practiced employees’ empowerment, bench marking so as to establish standards and Just in Time approach (JIT). In case two, National city bank practiced TQM principles of employee empowerment, bench marking and JIT. According to Smith, (2010), in case three, the township municipality practiced all the four principles of TQM/CRM.

In all the cases, continuous improvement was practiced through increasing quality and adding more value to customers. The author concluded that organizations have started realizing the
importance of total quality management and its effect on customer relationships. Organizations have to put much consideration on the human aspect because it has more value because this aspect is highly used in promoting quality assurance for both internal and external customers’ satisfaction, however, this goes hand by hand with a shared vision and mission statements among the employees.

Mele, (2007) conducted a study focusing on the synergistic relationship between TQM and marketing in creating customer value. The study used multiple case studies design and the population comprised of 23 business enterprises. The data collection methods included interviews and questionnaires. Analysis methods used were case study database and quantitative analysis. The study found that there was relationship between TQM and marketing which has managerial implications since it provides insight to managers on how marketing concepts can be used towards increasing customer satisfaction. The finding was interpreted to raise a wakeup call to marketing managers to be open minded and free to share customer knowledge within the organization, apply TQM principles and interact with customers to get more information and feedback from them. The author concluded that since TQM presents a platform for a successful marketing, TQM and marketing are complementary and synergistic in the process of value creation. The study suggested that further research is needed to examine the role of marketing in firms that have experienced difficulties in adopting TQM as well as the relationship between marketing and quality in different industries.
The study done by Zineldin, (2005) focused on quality and customer relationship management (CRM) as a competitive strategy in Swedish banking industry. The research used both qualitative and quantitative research designs and the population of the study comprised of Commercial banks in Sweden and their respective customers. Random systematic sampling was used to get a representative sample. Mail survey was used to collect data from commercial banks and customers. The findings showed that despite the aggressive competition that existed between commercial banks and other financial institutions, banking services were not price sensitive. 85% of respondents had a relationship with one of the four big banks in Sweden; therefore, positioning was found to be vital in this case since it assisted customers to differentiate one service provider from another.

Also the service quality was measured using the dimensions of credit availability, price competition, delivery system, promotion, reputation of the company and differentiation. The study pointed that competitive positioning can be achieved through products and services quality, CRM and differentiation. However, the relationship between quality, CRM and competitiveness can be measured using different indicators, while customer value and satisfaction can be measured using surveys or opinion pools.

Another study was conducted to evaluate how CRM contributes towards TQM improvement and was done as a cross case comparison study (Curry & Kkolou, 2004). The study used a case study that involved both exploratory and explanatory research designs. The population consisted of three companies, namely Boots the chemists, The John Lewis partnership and Standard life. In
case one, the researchers found that Boots was concerned with value management and it was customer oriented. Customer value was created through strengthening the internal marketing. CRM was seen through loyalty programs, where by Boots had been building mutual satisfying relations with customers. In case two, The John Lewis focused on human resource aspect of CRM, based on the argument that company personnel are the ones who determine how customer centered the company will be. This is because the CRM objectives rely on the personal relationships developed in individual selling transactions. Therefore, great emphasis was on service reliability, image and service recovery. In case three, Standard Life Company succeeded to make customers a central focus and all their actions were guided by customers’ needs.

This study by Curry and Kkolou, (2004) used the servqual 5 dimensions of reliability, assurance, tangibility, empathy and responsiveness. Out of the three cases, the researchers observed that CRM requires a corporate culture that allows changes, and successful changes need a shared vision by stakeholders. However, successful implementation of CRM largely depends on how well the internal marketing is managed and developed. They further indicated that the implementation of CRM involves many processes such as translation of vision into action to the process of mapping and identifying vital activities associated with performance to justify investment. Across the firms, the value of CRM to firms was to understand customer behavior, to establish standards and preferences for customers. The authors concluded that CRM is a philosophy, a way of running business and not management tool and needs a strong culture to support it. CRM across the companies had many aspects that closely resemble TQM in terms of focus on customer interaction, teamwork, continuous improvement and learning. The study
however called for further research on CRM that would include the aspects of quality management concepts to enrich CRM practice.

The second stream focused on integration of CRM and quality management. The findings from these studies showed that the implementation of CRM requires a shared vision and mission within the organization, and this goes in line with the focus on developing and managing the internal marketing that can add more value to customers by promoting the quality of products and services. Therefore, when CRM is integrated with quality, then customers’ value is created through customers’ satisfaction (Curry & Kkolou, 2004; Zineldin, 2005; Smith, 2010; Mele, 2007).

2.4.3 Studies on CRM and Technology Complementarity

Richard et al, (2007) conducted a study to examine the impact of adoption of CRM technology on Business to Business customer relationship. Both qualitative and exploratory research designs were used. Population of the study comprised of marketing and sales managers and their respective customers in New Zealand companies. Purposive sampling was used to get sample size and an in depth interview was used as an instrument for data collection. The findings showed that CRM technology was potentially benefiting B2B relationship performance because it was considered as a sales and marketing supporting tool that facilitated data collection from customers, analysis and retrievals. Customers perceived that companies adopt CRM technology so at to collect all the information pertaining customers and use that information to give the best to them and improve the business performance. The study established that trust and commitment are important elements in B2B relationship and concluded that CRM technology enhances
customer relationships through data and information centralization. They pointed that CRM applications appear to be industry related. They suggested that further research can be done on CRM technology adoption and implementation in different firms’ settings.

From the conclusions of studies in stream three focusing on CRM and technology complementarily, the findings showed that CRM technology is a vital tool in collecting, analyzing and storing data and information from customers. The information analyzed and stored is useful in tailoring the products and services needed by customers. Also this tool was used in creating and maintaining the relationship between customers and organizations (Richard et al., 2007).

2.4.4 Studies on Telecommunications Industry

Agyei and Kilika, (2013) conducted a study to assess the relationship between service quality and customer loyalty in the Kenyan Mobile Telecommunication industry. The study used descriptive survey design. The population included all members of Kenyatta University student community in both the Main Campus and other five satellite campuses. Multi-stage stratified sampling technique was used to get sample from the targeted population. Questionnaires were used for data collection. The findings indicated that the indicators of service quality had a positive relationship with customer loyalty but at different degrees in relating to loyalty. The SERVQUAL model was found to be important in measuring and understanding the relevance of service quality in service industry. The study suggested further investigation to establish whether service quality and customer loyalty relationship will have the same results when the dimensions of people and physical evidence are incorporated.
Wahab et al, (2010) conducted a study based on the relationship between E-service quality and Ease of use on CRM performance as a case of Jordan mobile services. The authors used stratified sampling to get a representative sample of mobile customers from five universities in northern, southern and central states of Jordan. Data was collected through Questionnaires. The findings showed that E-service quality and ease of use have an influence on CRM performance. The study suggested that mobile phone service operators should strive in improving CRM performance so as to attain higher level of service quality in order to enhance customer satisfaction.

Ojo, 2010 on the other hand conducted the study on the relationship between service quality and customer satisfaction in the Telecommunication Industry in Nigeria. The researcher used survey research design, and the population included customers of MTN Nigeria in Covenant University. Simple random sampling was used to draw a sample from the targeted population and questionnaires were used for data collection. The findings showed that there was relationship between customer service, service quality and customer satisfaction and led to the conclusion that customer service had an impact on service quality perception and customer satisfaction.

Wang and Po Lo, (2002)’s study was on service quality, customer satisfaction and behavior intentions in China Telecommunication industry. The researchers used survey research design, and the population of the study comprised of the customers of two giant mobile phone companies in China, convenient sampling was used to draw a sample from the population. The findings indicated that network quality, empathy and tangibles had significant positive influence on customer value in China’s mobile phone market, while there was no evidence to support the
influence of reliability, responsiveness and assurance. Also, customer perceived sacrifice had a significant negative impact on customer value. Among the key drivers of customer value, empathy and network quality were the two most important positive drivers while customer perceived sacrifice was the most important negative driver.

Johnson and Sirikit, 2002 researched on service quality in Thai Telecommunication industry. The study used cross sectional survey design. The population of the study comprised of land line telephone subscribers in Telecom Asia (TA) and Thai Telecom and Telegraph (TT&T) and mobile phone subscribers in Advance Info Services (AIS) and Total Access Communication (TAC). Convenience sampling was used to get a representation of the whole population and questionnaires were used in data collection. Findings showed that there was a statistically significant difference in customers’ perception of service quality in each Telecommunication company. Also, there was significance difference in customers’ expectations of service quality in each Telecommunication company.

Another study focused on Cross- national assessment of service quality in Telecommunication industry: evidence from USA and Germany (Leisen & Vance, 2001). Convenience sampling was used to draw a sample from the population that comprised of Germany residents who subscribed to phone services provided by Deutsche Telekom and students from a US university studying abroad; a questionnaire was used as a data collection tool. The findings showed that dimensionality of service quality varied in international contexts and by the types of service. The six models showed that as the dimensionality increases all goodness of fit of measures become
more favorable, and the most favorable measures were associated with the traditional five factor model. US residents consistently rated the reliability, responsiveness, assurance and empathy dimensions higher than their German counterparts. Conversely, Germans rated the tangible items higher than US residents. Therefore, service quality was remarkably important to overall satisfaction with telephone services.

Several authors have attempted to make an investigation on telecommunications industry on areas of service quality, CRM, customer loyalty, customer satisfaction and others. Very few studies have been done to reveal the situation of Telecommunications industry in Tanzania. The study conducted by Materu and Diyamett (2010) suggested that, telecommunications industry in Tanzania needs to enhance their systems in customer relationship management so as to attain service quality, thus give a room for the current study to further investigates the state of telecommunications industry in Arusha on the aspects of technology based CRM and service quality. Table 2.1 presents the summary of research gaps from the reviewed studies.
### Table 2.1 Summary of Research Gaps

<table>
<thead>
<tr>
<th>General theme</th>
<th>Author(s)</th>
<th>Study Focus</th>
<th>Findings</th>
<th>Limitation</th>
<th>Research gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessing the role of CRM in relationship management</td>
<td>Maklan &amp; Knox, (2008)</td>
<td>Dynamic capabilities: the missing link in CRM investment</td>
<td>The companies faced market place challenges suggested that investment on CRM should be done. And there is a need for companies to integrate CRM resources and related dynamic capabilities</td>
<td>Small sample size due to the use of purposive sampling and the findings cannot be generalized because the study used qualitative design</td>
<td>Further research on developing scale measures of dynamic capabilities to relate them with either CRM success or business performance</td>
</tr>
<tr>
<td></td>
<td>Thomson, <em>et al.</em>, (2009)</td>
<td>Developing relationship marketing through the implementation of CRM technology</td>
<td>Most of the organizations were at the early stage of CRM development. CRM implementation was purposely done to align corporate investment and management so as to create the greatest value to customers. However, implementation of CRM implied the change of focus from products/service to customers, thus, customers becomes the central focus of the organization.</td>
<td>The results cannot be generalized because the study used a case study design.</td>
<td>The study did not explain how the advancement of technology can play a great role in CRM</td>
</tr>
<tr>
<td></td>
<td>Bull, (2003)</td>
<td>Strategic issues in CRM implementation</td>
<td>There was a failure in CRM strategy to meet company’s expectations because of an ineffective software tool.</td>
<td>The research design was a case study, therefore, the results might not necessarily reflect the reality in other industries</td>
<td>More empirical research is needed to find out how organization can implement CRM successfully</td>
</tr>
<tr>
<td></td>
<td>Reinart <em>et al.</em>, (2004)</td>
<td>The CRM process: its measurement</td>
<td>CRM process implementation was positively associated</td>
<td>Studying dynamic phenomenon</td>
<td>Further research is needed to examine the</td>
</tr>
<tr>
<td>General theme</td>
<td>Author(s)</td>
<td>Study Focus</td>
<td>Findings</td>
<td>Limitation</td>
<td>Research gap</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------</td>
<td>-------------</td>
<td>----------</td>
<td>------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Integration of CRM with quality management</td>
<td>Curry &amp; Kkolou, (2004)</td>
<td>Evaluating CRM to contribute to TQM, a cross case comparison study</td>
<td>Implementation of CRM required a corporate culture that allowed changes, a shared vision and mission. Successful implementation of CRM largely depended on how well the internal marketing is managed and developed. CRM added value to firms through understanding customers’ behavior so as to establish customers’ behavior standards and preferences.</td>
<td>The research used case study design which makes the generalization of results impossible</td>
<td>Further research on CRM to include quality management concepts cotemporary to challenge and enhance CRM as it exists in practice</td>
</tr>
<tr>
<td></td>
<td>Zineldin, (2005)</td>
<td>Quality and CRM as competitive strategy</td>
<td>There was aggressive competition in commercial banks which made positioning vital because it assisted customers to differentiate one service provider from another. Competitive positioning was paramount and it was achieved through products and services quality, CRM and differentiation.</td>
<td>The research was only conducted in banking industry; therefore, the situation prevailing in banking industry is not necessarily reflecting the situation in other industries.</td>
<td>Further research is needed on quality and CRM as tools to enhance customer satisfaction and retention which in turn can help a company lead ahead its competitors.</td>
</tr>
<tr>
<td></td>
<td>Smith, (2010)</td>
<td>Strategic leveraging</td>
<td>The study showed that firms should concentrate</td>
<td>The results cannot be</td>
<td>Further research to address the</td>
</tr>
<tr>
<td>General theme</td>
<td>Author(s)</td>
<td>Study Focus</td>
<td>Findings</td>
<td>Limitation</td>
<td>Research gap</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------</td>
<td>------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Mele, (2007)</td>
<td>The synergic relationship between TQM and marketing in creating customer value</td>
<td>The relationship between TQM and marketing had managerial implications by providing insight to managers on how marketing concepts were used towards customers’ satisfaction which was the key principle to organizations; therefore, TQM represented a platform for a successful marketing. TQM and marketing were complementary and synergistic in the process of value creation</td>
<td>The results from the study cannot be generalized due to the use of case study design.</td>
<td>A deeper research should be done to analyze the role of the customer in the value creation process.</td>
</tr>
<tr>
<td></td>
<td>Richard et al., (2007)</td>
<td>An examination of CRM technology adoption and its impact on Business to Business customer relationship</td>
<td>CRM technology was considered as sales and marketing tool because it enhanced the data collection process from customers; and it was potentially benefiting B2B relationships performance. In a nutshell, CRM technology was a key enabler that can improve customer relationship by centralizing information and data, provide timely and accurate information to customers.</td>
<td>Small sample size, due to the use of exploratory and qualitative designs, The results cannot be generalized</td>
<td>Further research to be done on CRM technology adoption instrument and the factors that influence the success or failure of CRM technology implementation in different firms settings</td>
</tr>
<tr>
<td></td>
<td>Agyei &amp; Kilika</td>
<td>The studies were done on Telecommu</td>
<td>The findings from these studies showed that</td>
<td>The findings cannot be generalized</td>
<td>Further research is needed to identify the factors that influence the success or failure of CRM technology implementation in different firms settings</td>
</tr>
</tbody>
</table>
### General theme

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Study Focus</th>
<th>Findings</th>
<th>Limitation</th>
<th>Research gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications industry</td>
<td>the service quality itself and service quality in relation to different variables such as customer service, customer satisfaction, CRM and customer value</td>
<td>service quality had a greater influence on other dependent variables such as customer satisfaction, CRM performance and customer loyalty. On the other hand, the findings also showed that customer service had an impact on service quality perception and customer satisfaction</td>
<td>generalized due to the small sample size used</td>
<td>describe other variables such as technology that can be correlated to service quality on the telecommunication industry</td>
</tr>
</tbody>
</table>

Source: Author, (2014)

### 2.5 Conceptual Framework

In order to respond to the knowledge gaps raised in the literature review, this research proposed a conceptual model comprising of three variables whose interrelationships are shown in figure 2.8. The dependent variable of the study was Service Quality. Service Quality was operationalized through service reliability, service responsiveness, assurance, empathy and service tangibility. The study proposed that service quality was to be determined by the state of technology based CRM in mobile phone companies. The independent variable of the study was technology based CRM which was operationalized through system automation, system functionality, system user acceptance and system integration. Micro environment was the moderating variable of the study; it was operationalized through competition and supplier behavior. The micro environment variable was used as a moderator, moderating the relationship between technology based CRM and service quality.
Figure 2.8: Conceptual Framework
Source: Researcher, (2014)
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter of the thesis focuses on scope of methodological procedures that were employed in the study. The following are considered in the chapter; research design, sample design procedures, data collection instruments, data collection procedures, and data analysis techniques.

3.2 Research Design

The researcher used both descriptive and explanatory research designs, these designs were appropriate for this particular study since they were used to generate information for describing and explaining the effect of technology based CRM on service quality in telecommunications industry in Arusha. A descriptive study aims at generating knowledge that may be used to describe or develop a profile of a problem which is structured and well understood (Ghauri & Gronhaug, 2002; Zikmund, 2003). On the other hand explanatory research design aims at connecting ideas in order to understand the interaction of variables in terms of cause and effect relationship (Cooper & Schinder, 2003). Both designs were vital in this study since the study required a demonstration on how technology based CRM can influence the level of service quality. The designs were cross sectional in nature; where by elements from the population of interest were measured at a single point in time. The researcher developed two sets questionnaires that were used to collect relevant data prior to final analysis and presentation.
3.3 Target Population

The unit of analysis included mobile phone companies in telecommunications industry in Tanzania, namely; Vodacom, Airtel, Zantel and Tigo and the unit of observation included mobile phone companies’ managers, distributors and customers that made a total population of 26,514,895 participants. The attribute that made this population relevant was its ability to provide the information needed by the researcher. The population distribution among the stakeholders is shown in table 3.1.

Table 3.1: Targeted Population

<table>
<thead>
<tr>
<th>Stakeholder group</th>
<th>Frequency</th>
<th>Percent of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile phone companies</td>
<td>4</td>
<td>0.00015%</td>
</tr>
<tr>
<td>Distributors</td>
<td>276</td>
<td>0.00104%</td>
</tr>
<tr>
<td>Customers</td>
<td>26,514,579</td>
<td>99.99881%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>26,514,895</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: TCRA, (2013)

3.4 Sampling Design and Procedures

The set of variables and characteristics of the population for the study required a combination of sampling methods to be used. The research used the multistage sampling method. Multistage sampling is defined as a process of collecting some information by sample then using that information as the basis for collecting a sub-sample for further study. This sampling method was useful in overcoming problems associated with geographically disperse population when face to face contact is needed (Mugenda & Mugenda, 2003).

Several stages were used to identify and select respondents. The first stage involved identification of appropriate strata. The strata were obtained by categorizing the stakeholders into
groups of units with the same attributes, and in this case the strata involved sub groups of the
stakeholders in telecommunication industry in Arusha. The response groups in this study were in
three groups namely, mobile phone operators, distributors and individual customers.

Stage two of the sampling involved determination of sample size. The researcher used
mathematical formula adopted from Kothari (2004):

Formula:

\[ N_C = \frac{z^2 p.q N}{d^2 (N-1) + Z^2 p.q} \]

Where:
- \( N_C \) = is the desired sample size
- \( D \) = desired level precision i.e 0.05
- \( N \) = Total number of population in the targeted population
- \( Z \) = is the confidence level (95%) where \( z \) is equal to 1.96
- \( P \) = is the proportion of the strata population for entire population
- \( Q \) = or \( (1-p) \) is the proportion to the total population
- \( d \) = the desired level of statistical significance set (0.05)

The computed figure for the sample size using this formula was 323.

Stage three involved selection of respondents through a purposive sampling for the first two
strata and simple random sampling for the last stratum. Within the Mobile phone companies, the
study targeted managers in the key departments of IT, Marketing, Operations and Customer
Care. The distribution of the respondents across the various strata is shown in table 3.2.
Table 3.2: Sampling Frame

<table>
<thead>
<tr>
<th>Strata</th>
<th>Frequency</th>
<th>Total respondents</th>
<th>Proportionate Ratio</th>
<th>Adjusted/disproportionate Ratio</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile companies</td>
<td>4</td>
<td>40</td>
<td>0.0000015085</td>
<td>0.1</td>
<td>32</td>
</tr>
<tr>
<td>Distributors</td>
<td>276</td>
<td>276</td>
<td>0.0000104092</td>
<td>0.2</td>
<td>65</td>
</tr>
<tr>
<td>Customers</td>
<td>26,514,579</td>
<td>26,514,579</td>
<td>0.9999880821</td>
<td>0.7</td>
<td>226</td>
</tr>
<tr>
<td>Total</td>
<td>26,514,895</td>
<td></td>
<td>1</td>
<td>1</td>
<td>323</td>
</tr>
</tbody>
</table>

Source: Researcher, (2014)

3.5 Empirical model

The study used a linear regression model for testing the hypotheses drawn from the conceptual framework. The research adopted three models, one for testing the direct relationship between the independent variables and dependent variable, the second model for testing the dependent variable and moderating variable and the third model for testing the moderating effect of micro environment on the relationship between the independent and the dependent variables. The multiple regression was adopted since the study was assessing the relationships between a set of independent variables and a dependent variable. The regression models are shown below.

General multiple regression model

\[ Y = \alpha + \beta_1 X_1 + \ldots + \beta_N X_N + \epsilon_i \]

Where:
- \( Y \): Dependent variable
- \( \alpha \): Constant
- \( \beta_i \): Coefficient of independent variable
- \( \epsilon_i \): Error term
- \( X_i \): Independent variable
- \( N \): Infinite number

The Regression models were customized to the variables of the study to measure the relationship in the hypotheses of the study in three stages.

Multiple Regression model for the direct relationship:

\[ Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon_i \ldots \text{model 1} \]
Where:

\( Y = \text{Service Quality} \)
\( \alpha = \text{Constant} \)
\( \beta_1 = \text{Coefficient of CRM system automation} \)
\( \epsilon_i = \text{Error term} \)
\( X_1 = \text{CRM System automation} \)
\( \beta_2 = \text{Coefficient of CRM system functionality} \)
\( X_2 = \text{CRM system functionality} \)
\( \beta_3 = \text{Coefficient of CRM system user acceptance} \)
\( X_3 = \text{CRM system user acceptance} \)
\( \beta_4 = \text{Coefficient of CRM system integration} \)
\( X_4 = \text{CRM system integration} \)

Multiple Regression modeling for testing the dependent variable and moderator variable:

\[ Y = \alpha + \beta_1 M + \epsilon_i \ldots \ldots \text{model 2} \]

Where:

\( Y = \text{Service quality} \)
\( \alpha = \text{Constant} \)
\( \epsilon_i = \text{Error term} \)
\( \beta_1 = \text{Coefficient of micro environment factors} \)
\( M = \text{Moderating factor, micro environment factors} \)

Multiple Regression modeling for testing the moderating effect:

\[ Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_1 M + \epsilon_i \ldots \ldots \text{model 3} \]

Where:

\( Y = \text{Service quality} \)
\( \alpha = \text{Constant} \)
\( \epsilon_i = \text{Error term} \)
\( \beta_1 = \text{Coefficient of CRM system automation in the moderated relationship} \)
\( X_1 = \text{CRM system automation in the moderated relationship} \)
\( \beta_2 = \text{Coefficient of CRM system functionality in the moderated relationship} \)
\( X_2 = \text{CRM system functionality in the moderated relationship} \)
\( \beta_3 = \text{Coefficient of CRM system user acceptance in the moderated relationship} \)
\( X_3 = \text{CRM system user acceptance in the moderated relationship} \)
\( \beta_4 = \text{Coefficient of CRM system integration in the moderated relationship} \)
\( X_4 = \text{CRM system integration in the moderated relationship} \)
\( \beta_1 = \text{Coefficient of micro environment factors in the moderated relationship} \)
\( M = \text{Moderating factor, micro environment factors} \)

Source: MacKinnon et al. (1995)

### 3.6 Data Collection Tools and Procedures

The research used a 5-point structured Likert type questionnaire as a tool for data collection.

There were two different types of questionnaires, one for mobile phone companies and their
respective distributors and another for customers. The questionnaire for mobile phone companies and distributors was structured into three sections, section A, B, and C. Section A constituted demographic information, B constituted technology based CRM variables, C was made up of micro environment factors. The questionnaire for customers was structured into two sections; section A sought to obtain demographic information while section B had questions to measure service quality. The researcher administered the questionnaires to the mobile phone operators’ offices and the research assistants administered the questionnaires to customers. Two sets of questionnaires were used because the set of independent, dependent and moderator variables used in the study required different kind of data that came from different groups of stakeholders.

3.7 Validity

Validity refers to how well a test measures what is purported to be measured, in other words, validity refers to the degree to which a scale or measurement performs the function it was designed to perform (Hair, Bush & Ortinau 2003). The study used questionnaire pretesting method (pilot test) to ensure validity. According to Fink, (2003) it is important to pilot test the questionnaire in ensuring validity and the minimum number of questionnaires to be pilot tested should not be less than 10 questionnaires. The pretesting was done by distributing 40 questionnaires to 20 students in the MBA class in Kenyatta University and 20 questionnaires to Mt.Meru University students. The students went through the questionnaires to verify suitability of questions, language and style of expressing the questions and the suggestions incorporated to improve the questionnaire. The MBA students were appropriate in ensuring construct validity because the MBA program offers marketing courses hence students are familiar with marketing concepts. Also the questionnaires were distributed to one marketing executive from each mobile
company in Tanzania for pretesting, all this enabled the researcher to ensure face validity. MacKenzie, (2003) explains that construct validity is the extent to which a test measures the concept or construct that it is intended to measure, therefore, the study ensured the construct validity by adhering to both theoretical and conceptual reviews in preparing questionnaires.

3.8 Reliability

Reliability is the degree to which an assessment tool produces stable and consistent results. Computation of Cronbach’s Alpha score was used to ensure reliability (Travakol & Dennick, 2011). Cronbach’s Alpha computes the mean reliability coefficient estimates for all possible ways of splitting a set of items in half. The pre testing of questionnaires presented an overall reliability of 0.83 and 0.78 Alpha score respectively for mobile phone companies and customers. The reliability test from the findings was computed using Cronbach Alpha score. The test was done to the two sets of questionnaires, one for the mobile phone subscribers and the second for the mobile phone service providers. Table 3.3 illustrates the results of the reliability test.
Table 3.3: Reliability test

<table>
<thead>
<tr>
<th>Variable and components</th>
<th>Number of questions</th>
<th>Alpha score</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Service Quality</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empathy</td>
<td>3</td>
<td>0.792</td>
<td>Reliable</td>
</tr>
<tr>
<td>Tangibility</td>
<td>3</td>
<td>0.840</td>
<td>Reliable</td>
</tr>
<tr>
<td>Reliability</td>
<td>3</td>
<td>0.741</td>
<td>Reliable</td>
</tr>
<tr>
<td>Assurance</td>
<td>3</td>
<td>0.782</td>
<td>Reliable</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>4</td>
<td>0.834</td>
<td>Reliable</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td>16</td>
<td><strong>0.909</strong></td>
<td>Reliable</td>
</tr>
<tr>
<td><strong>Technology based CRM</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System automation</td>
<td>4</td>
<td>0.879</td>
<td>Reliable</td>
</tr>
<tr>
<td>System functionality</td>
<td>5</td>
<td>0.866</td>
<td>Reliable</td>
</tr>
<tr>
<td>System user acceptance</td>
<td>6</td>
<td>0.878</td>
<td>Reliable</td>
</tr>
<tr>
<td>System integration</td>
<td>4</td>
<td>0.862</td>
<td>Reliable</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td></td>
<td><strong>0.871</strong></td>
<td>Reliable</td>
</tr>
<tr>
<td><strong>Micro Environment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competition</td>
<td>6</td>
<td>0.855</td>
<td>Reliable</td>
</tr>
<tr>
<td>Suppliers</td>
<td>6</td>
<td>0.866</td>
<td>Reliable</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td><strong>76</strong></td>
<td><strong>0.968</strong></td>
<td>Reliable</td>
</tr>
</tbody>
</table>

*Source: Survey Data, (2014)*

The acceptable Alpha value that meets the statistical requirement for the instrument to be characterized as reliable should be 0.70 and above (Travakol & Dennick, 2011). The Alpha score for both questionnaire sets have fallen within the given range. This implies that the assessment tool (questionnaire) used was capable of producing stable and consistent results.

### 3.9 Data Analysis and Presentation

This study used both descriptive analysis and inferential analysis. Descriptive statistics were used to summarize the characteristics of all variables in the administered questionnaires in order to present the data in a more meaningful way, which allowed simpler interpretation of the data. In descriptive statistics, mainly, measures of central tendency (mean), measures of dispersion (standard deviation); and relevant graphs and charts have been utilized. Inferential statistics aimed at testing the hypotheses. The research applied linear regression analysis to test the hypotheses depicted in the conceptual framework. The regression analysis has been performed
for each hypothesis and the regression output parameters used to interpret the findings as summarized in the table 3.5

Table 3.4: Testing of Hypotheses

<table>
<thead>
<tr>
<th>Objective</th>
<th>Hypothesis</th>
<th>Statistical method of analysis</th>
<th>Parameters for analysis of findings</th>
<th>Interpretation of findings</th>
</tr>
</thead>
</table>
| To assess the relationship between System Automation and Service Quality in the Telecommunications industry in Arusha | H₀₁: there is no statistically significant relationship between System Automation and Service Quality in Telecommunications industry in Arusha | Multiple Regression model:  
Y = α + β₁X₁ + β₂X₂ + β₃X₃ + β₄X₄ + εᵢ  
Where: 
Y = Service Quality  
α = Constant  
βᵢ = Coefficient of system automation  
εᵢ = Error term  
X₁ = system automation  
β₂ = Coefficient of system functionality  
X₂ = system functionality  
β₃ = Coefficient of system user acceptance  
X₃ = system user acceptance  
β₄ = Coefficient of system integration  
X₄ = system integration | R²  
F  
P<0.05 | R² = 0.4 weak relationship  
R² = 0.4-0.6 moderate relationship  
R² above 0.6 strong relationship  
Accept H₀ if p>0.05 and Hₐ if p<0.05 (Field, 2005) |
| To establish the relationship between System Functionality and Service Quality in the Telecommunications Industry in Arusha | H₀₂: there is no statistically significant relationship between System Functionality and Service Quality in Telecommunications industry in Arusha | Multiple Regression model:  
Y = α + β₁X₁ + β₂X₂ + β₃X₃ + β₄X₄ + εᵢ  
Where: 
Y = Service Quality  
α = Constant  
βᵢ = Coefficient of system automation  
εᵢ = Error term  
X₁ = system automation  
β₂ = Coefficient of system functionality  
X₂ = system functionality  
β₃ = Coefficient of system user acceptance  
X₃ = system user acceptance  
β₄ = Coefficient of system integration  
X₄ = system integration | R²  
F  
P<0.05 | R² = 0.4 weak relationship  
R² = 0.4-0.6 moderate relationship  
R² above 0.6 strong relationship  
Accept H₀ if p>0.05 and Hₐ if p<0.05 (Field, 2005) |
| To establish the relationship between System User Acceptance and Service Quality in the Telecommunications Industry in Arusha | H₀₃: there is no statistically significant relationship between System User Acceptance and Service Quality in Telecommunications industry in Arusha | Multiple Regression model:  
Y = α + β₁X₁ + β₂X₂ + β₃X₃ + β₄X₄ + εᵢ  
Where: 
Y = Service Quality  
α = Constant  
βᵢ = Coefficient of system automation  
εᵢ = Error term  
X₁ = system automation  
β₂ = Coefficient of system functionality  
X₂ = system functionality  
β₃ = Coefficient of system user acceptance  
X₃ = system user acceptance  
β₄ = Coefficient of system integration  
X₄ = system integration | R²  
F  
P<0.05 | R² = 0.4 weak relationship  
R² = 0.4-0.6 moderate relationship  
R² above 0.6 strong relationship  
Accept H₀ if p>0.05 and Hₐ if p<0.05 (Field, 2005) |
| To establish the relationship between System Integration and Service Quality in the Telecommunications Industry in Arusha | H₀₄: there is no statistically significant relationship between System Integration and Service Quality in Telecommunications industry in Arusha | Multiple Regression model:  
Y = α + β₁X₁ + β₂X₂ + β₃X₃ + β₄X₄ + εᵢ  
Where: 
Y = Service Quality  
α = Constant  
βᵢ = Coefficient of system automation  
εᵢ = Error term  
X₁ = system automation  
β₂ = Coefficient of system functionality  
X₂ = system functionality  
β₃ = Coefficient of system user acceptance  
X₃ = system user acceptance  
β₄ = Coefficient of system integration  
X₄ = system integration | R²  
F  
P<0.05 | R² = 0.4 weak relationship  
R² = 0.4-0.6 moderate relationship  
R² above 0.6 strong relationship  
Accept H₀ if p>0.05 and Hₐ if p<0.05 (Field, 2005) |
To determine the effect of Micro Environment factors on the relationship between Technology Based CRM and Service Quality in the Telecommunications Industry in Arusha

H₀₀: there is no statistically significant effect of Micro Environment factors on the relationship between Technology Based CRM and Service Quality in Telecommunications industry in Arusha

Three Linear Regression models:

Model 1:
\[ Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \]

Model 2:
\[ Y = \alpha + \beta_1 M + \epsilon \]

Model 3:
\[ Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 M + \epsilon \]

Where:
- \( Y \): Service quality
- \( \alpha \): Constant
- \( \epsilon \): Error term
- \( \beta_1 \): Coefficient of CRM system automation
- \( \beta_2 \): Coefficient of CRM system functionality
- \( \beta_3 \): Coefficient of CRM system user acceptance
- \( \beta_4 \): Coefficient of CRM system integration
- \( \beta_5 \): Coefficient of micro environment factors in the moderated relationship
- \( M \): Moderating factor, micro environment factors

Change in \( R^2 \), \( \beta \) coefficients:
- Accept \( H_0 \) if \( p > 0.05 \) and \( H_A \) if \( p < 0.05 \)

Source: Researcher, (2014)
<table>
<thead>
<tr>
<th>Variable</th>
<th>Role/Type</th>
<th>Operationalisation</th>
<th>Indicators</th>
<th>Measurement in questionnaire</th>
</tr>
</thead>
</table>
| CRM System Automation    | Independent   | How the ERP system used by the mobile phone company has been designed to allow users to utilize customer centric tools for automating and organizing customer service and support.                                                                                                                                                                                                 | - Data capturing  
- Automation of services  
- Computerized work systems  
- Computer automated equipments | Appendix 1, section B  
Questions 1-4                                                                                                                                            |
| CRM System Functionality | Independent   | How system software such as web provides templates for translating customers’ needs using quality function deployment to analyze customers’ needs and make recommendation in product design development.                                                                                                                                                  | - Information management  
- Usefulness of the system  
- Reliability of the system  
- Meeting requirements  
- Technology processes | Appendix 1, section B  
Questions 5-9                                                                                                                                            |
| CRM System User Acceptance | Independent | How the internal users are able to operate the installed technology based CRM systems in delivering the desired results                                                                                                                                                                                                                           | - Employees acceptance  
- Ease of use  
- Easy to work with  
- Willingness to use system  
- Faith in the system  
- System performance | Appendix 1, section B  
Questions 10-15                                                                                                                                           |
| CRM System Integration   | Independent   | How the CRM systems can integrate marketing activities such as need generation and customer service and support with other business activities to deliver higher level of service quality.                                                                                                                                                   | - Data sharing  
- System support  
- Interaction among users  
- Integration of departments | Appendix 1, section B  
Questions 16-19                                                                                                                                           |
| Micro Environment        | Moderator     | How the external environment affects the way companies formulate strategies, design and offer the marketing mix regarding supplier behavior and competition                                                                                                                                                                                                 | - Fixed costs, pricing  
- Entry and exit barriers  
- Advertising and marketing strategies  
- New products and services  
- Supplying quantity and costs  
- Costs of switching suppliers  
- Input substitutes  
- Link in value delivery system | Appendix 1, section C  
Questions 1-12                                                                                                                                            |
| Service Quality          | Dependent     | The assessment of how well the delivered service conforms to the expectations of the customer                                                                                                                                                                                                                                                      | - Understanding needs and meeting expectations  
- Offices and communication materials  
- Ready to serve, consistency and willingness  
- Commitment in providing right attributes at the required speed  
- Competence, professionalism and conformation | Appendix 2, section B  
Questions 1-16                                                                                                                                            |

*Source: Researcher, (2014)*
3.10 Ethical Considerations

According to McDaniel and Gates (1996) ethics refers to the moral principles or values generally governing the conduct of an individual or group. These morals are often described in terms of good or bad, right or wrong. This study adhered to ethical consideration of all stakeholder groups. The stakeholders to this study included public (society), respondents and the researcher(s). The study complied with conventional morality which bases on the expectations of the society by embracing loyalty, duty and obedience virtues. On the other group of stakeholders that included respondents, the study ensured privacy of respondents and confidentiality. Lastly, the researcher adhered to integrity, honesty, objectivity and avoided plagiarism (Malhotra, 2000).
CHAPTER FOUR
RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

In this chapter, the researcher presents analysis of data on the findings of the study. The total number of questionnaires distributed was 323, where by 226 questionnaires were distributed to mobile phone subscribers and 97 questionnaires were distributed to mobile phone operators and their distributors. The data was collected between June and August 2014 in Arusha. The total number of questionnaires responded to was 293, that is, 214 from respondents’ mobile subscribers (customers) and 79 respondents from mobile phone operators. The total number of questionnaires which were not returned was 30. Therefore, response rate is 90%.

4.3 Respondents’ Biographic Information

Both questionnaires for mobile phone operators and mobile subscribers had a section that required respondents to disclose their biographic information in terms of gender, age, education level and residence. The responses are reported in this section.

4.3.1 Customers Biographic Data

This study sought to understand the biographic characteristics of mobile phone customers since in marketing theory such factors may influence consumption decisions. In this study the research instrument required customers to provide details about their gender, age, places of their residence, education level and point of purchase of airtime as well as their preferred service providers. The results of these factors are presented in a cross tabulated form in table 4.1.
Table 4.1: Customers Biographic Information

<table>
<thead>
<tr>
<th>Gender and Service Provider</th>
<th>Aggregate %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>Vodacom</td>
</tr>
<tr>
<td>57</td>
<td>10</td>
</tr>
<tr>
<td>Female</td>
<td>47</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age and Service Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td>18-25</td>
</tr>
<tr>
<td>26-35</td>
</tr>
<tr>
<td>36-45</td>
</tr>
<tr>
<td>46-55</td>
</tr>
<tr>
<td>56-70</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education Level and Service Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education level</strong></td>
</tr>
<tr>
<td>Primary</td>
</tr>
<tr>
<td>Secondary</td>
</tr>
<tr>
<td>Diploma</td>
</tr>
<tr>
<td>Degree</td>
</tr>
<tr>
<td>Masters</td>
</tr>
<tr>
<td>PhD</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location and Service Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residence</strong></td>
</tr>
<tr>
<td>Arusha City</td>
</tr>
<tr>
<td>Arumeru</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Airtime point of purchase and Service Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Airtime point of purchase</strong></td>
</tr>
<tr>
<td>Retail Shops</td>
</tr>
<tr>
<td>Mobile Money</td>
</tr>
<tr>
<td>Retail Shops and Mobile money</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

*Source: Survey Data, (2014)*

From the above table, the total number of female respondents outweighs the total number of male respondents. Also, majority of the respondents are aged between 18 and 25 years which
makes 43.6% of the total respondents, followed by respondents aged between 26 and 35 years which makes 37.9%, implying that majority of mobile phone users are youths, whereas minority are aged between 56 to 70 years which is 1.4% of the total respondents. The education level is not evenly distributed at secondary, diploma and degree levels, the bigger percentage of the respondents was 37% followed by 25% for both diploma level and degree level and the lowest percentage of respondents was having 1.4% which is the education level at doctorate. 87% of respondents reside in Arusha city where as the remaining percentage which is 13% reside in Arumeru, a district that borders Arusha city.

Majority of respondents that is 79.2% purchase their airtime at the local retail shops near their residence, while 10% purchase airtime using mobile money and 10.8% purchase airtime from the retail shops and mobile money. Moreover, 48.6% of respondents prefer Vodacom as their service provider, where as 21%, 17.8% and 12.65% prefer Tigo, Zantel and Airtel respectively as their service providers, from the findings Vodacom has led in having big percent of the market share in Arusha compared to other mobile phone operators.

4.3.2 Mobile Phone Operators Biographic Data
The study also sought to understand the biographic characteristics of respondents from the mobile phone companies. The study targeted employees of mobile phone companies and distributors so as to identify the years of working experience, and education level; as the level of education and years of working experience influence performance to a high extent (Dwyer & Tanner, 2002). Table 4.2 demonstrates the biographic characteristics of mobile phone service providers.
Table 4.2 Mobile Phone Operators and Distributors Biographic Information

<table>
<thead>
<tr>
<th>Gender and Mobile phone Operator</th>
<th>Aggregate %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vodacom</td>
</tr>
<tr>
<td>Male</td>
<td>12</td>
</tr>
<tr>
<td>Female</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age and Mobile phone Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile phone Operator</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>18-25</td>
</tr>
<tr>
<td>26-35</td>
</tr>
<tr>
<td>36-45</td>
</tr>
<tr>
<td>46-55</td>
</tr>
<tr>
<td>56-70</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education Level and Mobile phone Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile phone Operator</td>
</tr>
<tr>
<td>Education level</td>
</tr>
<tr>
<td>Secondary</td>
</tr>
<tr>
<td>Diploma</td>
</tr>
<tr>
<td>Degree</td>
</tr>
<tr>
<td>Masters</td>
</tr>
<tr>
<td>PhD</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location and Mobile phone Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile phone Operator</td>
</tr>
<tr>
<td>Location</td>
</tr>
<tr>
<td>Arusha City</td>
</tr>
<tr>
<td>Dar es Salaam</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Source: Survey Data, (2014)

Table 4.2 indicates that the number of male employees slightly exceeds the number of female employees, which makes the percentage of male being 50.6% and that of female being 49.6%, this sends a message that there is a fair gender distribution of employees in mobile phone companies. 13.9% of the employees working at mobile phone companies are aged between 18 and 25, this group of respondents has less years of experience compared to other groups that fall within 26 to 65, and they are fresh from universities or college. The age group between 26 and 35 had the biggest percentages of respondents, which is 48.1%, followed by 20.3% aged between
36 and 45, the age range from 18 to 45 represents youth, who are energetic and capable of working hard so as in return to fulfill their dreams in their lives. Another age group which is the third group in having many respondents’ ranges from 46 to 55 years carries 15.2%. Also the age range from 26 to 65 communicates the years of experience that employees have at work. The last age group with few respondents ranges from 56 to 65, employees at this age group are the people with the longest years of experience and they are almost retiring, companies prefer to have them because they are the most knowledgeable people on their areas of specialization. Therefore, with this biographic data there is an assurance that the respondents were competent enough to give relevant responses. On residence, 50.6% of employees reside in Arusha and work in Arusha as well, where as 49.4% of the employees reside and work in Dar es salaam, this implies that some of the mobile phone operators have centralized their systems in such a manner that major activities are done at their headquarters only.

4.4 Descriptive Analysis

The questionnaire for mobile phone service providers had four variables while that for customers had one variable. The respondents were required to indicate their responses in a scale of 1-5 where by 1 indicated not at all, 2 to some extent, 3 to a fair extent, 4 to a good extent and 5 to a very high extent. The descriptive findings of the sections of the questionnaire dealing with the variables are presented in this section.

4.4.1 CRM System Automation

This section of the questionnaire sought to understand the systems that mobile phone companies have employed so as to facilitate automation of activities in serving customers. The respondents
were required to respond to the statements according to a scale of 1 to 5. The total number of respondents who responded to this section of questionnaires was 79. Table 4.3 shows the findings on system automation.

**Table 4.3 Descriptive Statistics on System Automation**

<table>
<thead>
<tr>
<th>Extent of:</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Technology facilitates relevant data capturing</td>
<td>79</td>
<td>1.00</td>
<td>5.00</td>
<td>3.5190</td>
<td>.98529</td>
</tr>
<tr>
<td>• Technology enables automation of business activities</td>
<td>79</td>
<td>1.00</td>
<td>5.00</td>
<td>3.5949</td>
<td>.96767</td>
</tr>
<tr>
<td>• Computerization of work systems</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.7722</td>
<td>.87632</td>
</tr>
<tr>
<td>• Work equipments are computer automated</td>
<td>79</td>
<td>1.00</td>
<td>5.00</td>
<td>3.8861</td>
<td>.87687</td>
</tr>
<tr>
<td><strong>Aggregate scores</strong></td>
<td></td>
<td></td>
<td></td>
<td>3.6930</td>
<td>.9265</td>
</tr>
</tbody>
</table>

*Source: Survey Data, (2014)*

The aggregate mean score is 3.6930 and standard deviation is 0.9265. The standard deviation of 0.9265 indicates that there is a low variation in responses given when responding to system automation. All the statements have a mean score of 4 when rounded off to the nearest whole number, indicating that mobile phone service providers have invested in technology to ensure system automation through data capturing facilitated by the existing technology, automation of business activities, computerization of work systems and equipment.

Lancaster and Reynolds,(1995) support this findings by commenting that technology based CRM consists of web sites that allow customers to make inquiries and purchase online automatically without the presence of sales people through customer centric tools which are highly supported by the presence of internet connection that allow sharing of information at a very high speed. Barkley and Saylor, (2001) on the other hand added that with computerized systems companies can answer customers questions, solving their problems and selling additional products with less or no human interventions at all.
4.4.2 CRM System Functionality

This section of the questionnaire sought to obtain information on the systems that mobile phone companies have put in place to enhance system functionality. The respondents were required to respond to the statements according to a scale of 1 to 5. The total number of respondents who responded to this section of questionnaires was 79. Table 4.4 presents the findings on customer service.

Table 4.4: Descriptive Statistics on System functionality

<table>
<thead>
<tr>
<th>The Extent</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The system is reliable in performing tasks</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.6076</td>
<td>.92567</td>
</tr>
<tr>
<td>Technology processes and avails information as</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.6835</td>
<td>.91349</td>
</tr>
<tr>
<td>required by users</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The technology meets the basic requirements</td>
<td>79</td>
<td>1.00</td>
<td>5.00</td>
<td>3.7215</td>
<td>.95992</td>
</tr>
<tr>
<td>ICT manages information well</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.7215</td>
<td>1.01194</td>
</tr>
<tr>
<td>The existing technology is useful</td>
<td>79</td>
<td>1.00</td>
<td>5.00</td>
<td>3.7468</td>
<td>.86925</td>
</tr>
<tr>
<td><strong>Aggregate scores</strong></td>
<td></td>
<td></td>
<td></td>
<td>3.6962</td>
<td>.9360</td>
</tr>
</tbody>
</table>

Source: Survey Data, (2014)

The aggregate mean score of 3.6962 and a standard deviation of 0.9360. The standard deviation of 0.9360 indicates that there is a low variation in responses given when responding to system functionality. The mobile phone service providers have responded well to all the statements because there were no missing values, and the mean scores for each statement can be rounded off to their nearest whole number to arrive at 4. The mean score of 4 according to the scale used indicate that mobile phone companies ensure systems are reliable in performing tasks; the existing technology processes and avails information as required by users, the existing technology meets the basic requirements and guarantees that the existing ICT manages information.
In general, mobile phone operators have responded to a good extent on the aspect of system functionality. Barkley and Saylor, (2001) support the findings of this study by explaining that CRM system provides templates for translating customers using quality function deployment, to analyze detailed customers requirements and to make recommendations in product development.

4.4.3 CRM System User Acceptance

This part of the questionnaire sought to obtain information on the systems that mobile phone companies have put in place to enhance system user acceptance. The respondents were required to respond to the statements according to a scale of 1 to 5. The total number of respondents who responded to this section of questionnaire was 79. Table 4.5 presents the findings on system user acceptance.

Table 4.5 Descriptive Statistics on System user acceptance

<table>
<thead>
<tr>
<th>The Extent:</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The system is relatively easy to use</td>
<td>79</td>
<td>1.00</td>
<td>5.00</td>
<td>3.3797</td>
<td>1.14694</td>
</tr>
<tr>
<td>Employees can easily use the existing information processing system</td>
<td>79</td>
<td>1.00</td>
<td>5.00</td>
<td>3.6709</td>
<td>1.03430</td>
</tr>
<tr>
<td>Staff are willing to use ICT in their daily activities</td>
<td>79</td>
<td>1.00</td>
<td>5.00</td>
<td>3.6835</td>
<td>.98116</td>
</tr>
<tr>
<td>Employees have faith in the existing ICT system</td>
<td>79</td>
<td>1.000</td>
<td>5.000</td>
<td>3.74684</td>
<td>.993161</td>
</tr>
<tr>
<td>Employees have accepted the ICT system used in the company</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.8101</td>
<td>.87817</td>
</tr>
<tr>
<td>Employees believe the existing ICT system facilitates performance</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.8734</td>
<td>.91100</td>
</tr>
<tr>
<td>Aggregate scores</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.6941</td>
<td>.9908</td>
</tr>
</tbody>
</table>

Source: Survey Data, (2014)

The findings present aggregate mean score of 3.6941 and a standard deviation of 0.9908. The standard deviation of 0.9908 indicates that there is a low variation in responses given when responding to system user acceptance. One statement has scored a mean of 3.3797, in response to ease of using the system; according to the scale used it indicates that employees can easily use the systems to a fair extent. On the other hand, the rest of statements have scored the mean of 4
when the numbers rounded off to the nearest whole number. The mean score of 4 shows that service providers have responded to a good extent on staff willingness to use ICT in their daily activities, employees’ acceptance and faith in the existing ICT system and employees belief in the existing ICT systems in facilitating performance. The study done by Wahab et al. (2010) is in line with the findings of this study, in which the researchers suggested that the ease of use of an existing information system by the employees together with the aspect of service quality have a major role on CRM performance. Also, the Technology Acceptance Model supports the findings of this study by explaining that perceived ease of use contributes to improving an employee’s performance, basically the employees will accept to use the existing systems in the company only when they perceive that the use of the system is easy and will simplify work (David et al., 1989).

4.4.4 CRM System Integration

This part of the questionnaire sought to get information on the systems that mobile phone companies have put in place to enhance system user acceptance. The respondents were required to respond to the statements according to a scale of 1 to 5. The total number of respondents who responded to this section of questionnaire was 79. Table 4.6 presents the findings on system integration.
Table 4.6 Descriptive Statistics on System Integration

<table>
<thead>
<tr>
<th>Extent:</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The company has invested in the equipment, machines and personnel to support ICT</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.7215</td>
<td>.97319</td>
</tr>
<tr>
<td>The ICT system enables data sharing</td>
<td>79</td>
<td>1.00</td>
<td>5.00</td>
<td>3.8101</td>
<td>.90690</td>
</tr>
<tr>
<td>The existing ICT system allows interactions among users in different areas</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.8228</td>
<td>.99691</td>
</tr>
<tr>
<td>The existing system has integrated various company departments</td>
<td>79</td>
<td>1.00</td>
<td>5.00</td>
<td>3.8608</td>
<td>.97052</td>
</tr>
</tbody>
</table>

Aggregate scores: 3.8038 .9619

Source: Survey Data, (2014)

The findings present the aggregate mean of 3.8038 and a standard deviation of 0.9619 for system integration. The standard deviation of 0.9619 indicates that there is a low variation in responses given when responding to system integration. All the statements have scored the mean of 4 when the figures are rounded off to their nearest whole number, according to the scale used, the mean scores of 4 indicate a response of a good extent to systems integration in the companies in aspects of investments in the equipment, machines and personnel to support ICT, ICT systems that allow data sharing and interactions among users in different areas and integration of various departments. The findings on the studies done by Maklan and Knox, 2008; Thomson et al. 2009; Bull, 2003 and Reinart et al. 2004 strongly support the findings of this study on their suggestion that CRM cannot work alone, there is a need to integrate technology based CRM with other functions within the organization in order to deliver the desired value to customers so as to offer satisfaction of their needs.

4.4.5 Micro Environmental Factors

This section sought to obtain information on the micro environment factors that influence activities carried out by the mobile phone operators. The respondents were required to respond to
the statements according to a scale of 1 to 5. The total number of respondents who responded to this section of questionnaire was 79. Table 4.7 shows the responses for this section.

**Table 4.7 Descriptive Statistics on Micro Environmental Factors**

<table>
<thead>
<tr>
<th>Extent</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The company is incurring high fixed costs in running its daily activities</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.5823</td>
<td>.94201</td>
</tr>
<tr>
<td>The exit barriers to the company are too high</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.6329</td>
<td>.86495</td>
</tr>
<tr>
<td>Much of the competition involves pricing</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.7342</td>
<td>.87279</td>
</tr>
<tr>
<td>The company is highly investing in advertising</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.6329</td>
<td>.83478</td>
</tr>
<tr>
<td>The company introduces new products and services in the market</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.7595</td>
<td>.83536</td>
</tr>
<tr>
<td>Company uses different competitive marketing strategies</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.8481</td>
<td>.84866</td>
</tr>
<tr>
<td>Suppliers form an important link in the customer value delivery system</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.5949</td>
<td>.96767</td>
</tr>
<tr>
<td>Suppliers problems can seriously affect marketing activities</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.6835</td>
<td>.80931</td>
</tr>
<tr>
<td>Suppliers raise price when supplying important inputs</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.6456</td>
<td>.84789</td>
</tr>
<tr>
<td>Suppliers change the quantity they are ought to supply</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.7089</td>
<td>.92198</td>
</tr>
<tr>
<td>The costs of switching the suppliers are too high</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.8354</td>
<td>.80750</td>
</tr>
<tr>
<td>There are few substitutes of inputs that suppliers supply to the company</td>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.7089</td>
<td>.94938</td>
</tr>
</tbody>
</table>

**Aggregate scores**

<table>
<thead>
<tr>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>79</td>
<td>2.00</td>
<td>5.00</td>
<td>3.6973</td>
<td>.8752</td>
</tr>
</tbody>
</table>

Source: Survey Data, (2014)

From the findings, the aggregate mean score of 3.6973 and standard deviation of 0.8552 were observed from micro environment. All the statement have scored the mean figures that can be rounded off to 4, indicating that micro environment factors are perceived to influence activities carried out by the companies to a good extent. The standard deviation of 0.8552 indicates that there is a low variation in responses given when responding to micro environment. The micro environment influence companies’ activities in the areas of fixed cost, exist barriers, price, advertising, introduction of new products and services, competitive marketing strategies, and suppliers.
In addition, Zineldin, (2005) argued that service quality, CRM and differentiation can enable a firm to be ahead of its competitors, hence supporting the findings of this study by showing the role of components of the marketing environment in addressing matters touching on service quality and CRM. The study done by Johnson and Sirikit, (2002) supports the findings of this study by their observation that CRM investment is vital for a firm to survive in the competitive environment and hence marketers need to be aware of the external environmental influences among whom are competitors and their strategic moves.

4.4.5 Service Quality

This questionnaire was responded by customers to mobile phone operators. This section sought to acquire information on service quality, which reflects how well a delivered service conforms to customers’ expectation (s). The respondents were required to respond to the statements according to a scale of 1 to 5. The total number of respondents responded to this section of questionnaires was 214. Table 4.8 shows the response for this section.
### Table 4.8 Descriptive Statistics on Service Quality

<table>
<thead>
<tr>
<th>Extent of:</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding needs</td>
<td>209</td>
<td>1.00</td>
<td>5.00</td>
<td>3.4354</td>
<td>1.10805</td>
</tr>
<tr>
<td>Delivering services</td>
<td>208</td>
<td>1.00</td>
<td>5.00</td>
<td>3.3750</td>
<td>1.04199</td>
</tr>
<tr>
<td>Meeting expectations</td>
<td>208</td>
<td>1.00</td>
<td>5.00</td>
<td>3.2644</td>
<td>1.19268</td>
</tr>
<tr>
<td>Providing an office</td>
<td>209</td>
<td>1.00</td>
<td>5.00</td>
<td>3.5694</td>
<td>1.25431</td>
</tr>
<tr>
<td>Providing communication</td>
<td>209</td>
<td>1.00</td>
<td>5.00</td>
<td>3.2584</td>
<td>1.24817</td>
</tr>
<tr>
<td>Distribution channel</td>
<td>208</td>
<td>1.00</td>
<td>5.00</td>
<td>3.6346</td>
<td>1.28580</td>
</tr>
<tr>
<td>Company readiness to serve</td>
<td>208</td>
<td>1.00</td>
<td>5.00</td>
<td>3.5481</td>
<td>1.19887</td>
</tr>
<tr>
<td>Consistency of services</td>
<td>208</td>
<td>1.00</td>
<td>5.00</td>
<td>3.3990</td>
<td>1.19152</td>
</tr>
<tr>
<td>Tailored services</td>
<td>211</td>
<td>1.00</td>
<td>5.00</td>
<td>3.4313</td>
<td>1.10357</td>
</tr>
<tr>
<td>Ensuring right attributes</td>
<td>209</td>
<td>1.00</td>
<td>5.00</td>
<td>3.4306</td>
<td>1.07695</td>
</tr>
<tr>
<td>Commitment in improving services</td>
<td>209</td>
<td>1.00</td>
<td>5.00</td>
<td>3.5550</td>
<td>1.05525</td>
</tr>
<tr>
<td>Required speed</td>
<td>206</td>
<td>1.00</td>
<td>5.00</td>
<td>3.4709</td>
<td>1.14620</td>
</tr>
<tr>
<td>Demonstrating competence</td>
<td>208</td>
<td>1.00</td>
<td>5.00</td>
<td>3.6202</td>
<td>1.17748</td>
</tr>
<tr>
<td>Professionalism</td>
<td>208</td>
<td>1.00</td>
<td>5.00</td>
<td>3.4952</td>
<td>1.06321</td>
</tr>
<tr>
<td>Response to inquiries</td>
<td>209</td>
<td>1.00</td>
<td>5.00</td>
<td>3.5455</td>
<td>1.20459</td>
</tr>
<tr>
<td>Service conformance to preference</td>
<td>208</td>
<td>1.00</td>
<td>5.00</td>
<td>3.7067</td>
<td>1.21008</td>
</tr>
<tr>
<td><strong>Aggregate scores</strong></td>
<td></td>
<td></td>
<td></td>
<td>3.4837</td>
<td>1.1599</td>
</tr>
</tbody>
</table>

Source: Survey Data, (2014)

Table 4.8 shows the variable’s aggregate mean score is 3.4837 while the standard deviation 1.1599. Five statements have a mean score of 4 when the means are rounded off to their nearest, indicating that the customers views are rated at the level of a good extent on the areas of conforming of services to their preference, demonstration of competence by service providers, commitment of service providers in providing services and the presence of offices where by customers can go for more assistance. The remaining 12 statements scored a mean value rated at the level of 3, implying that customers’ perceptions are rated at the level of a fair extent on the areas of professionalism demonstrated by the service providers, response to their enquiries, speed of delivering services, commitment in improving quality, consistency of services, tailoring of
services, meeting expectations, provision of communication and the presence of offices to serve customers.

The standard deviation of 1.1599 indicates that there is a high variation in responses given when responding to the level of service quality offered to mobile phone customers. These findings seem to be consistent with the studies reviewed earlier on CRM, TQM and Servqual. Curry and Kkolou (2004) had indicated that CRM helps firms to understand customer behavior, establish standards and preferences. In addition, they also pointed that CRM contributes to TQM. This section had some statements connected with these dimensions and the mean scores measuring to the level ranging from a fair extent to a good extent suggest that the technology based CRM has been used in this industry to attain the same goals that the reviewed empirical literature had suggested.

4.5 Diagnostic Tests

The test of hypotheses in this study used regression analysis. Regression analysis requires a researcher to establish whether the regression results meet requirements raised by the key assumptions. The study tested the data to ensure that the assumption of multicollinearity is satisfied. Field, (2005) and Hair, Anderson, Tatham, and Black, (1995) suggest use of the Variance Inflation Factor (VIF) to ascertain multicollinearity. For acceptable levels, the VIF should range between 1 and 10. The study has used multicollinearity only because when the sample size is large it is assumed that the sample is normally distributed also the study has not used time series data. This criterion was used on the data as presented in tables 4.9.
Table 4.9: Diagnostic Tests

<table>
<thead>
<tr>
<th>Direct relationship: independent and dependent variables</th>
<th>Coefficients(^a)</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>System automation</td>
<td>.100</td>
<td>9.020</td>
</tr>
<tr>
<td>System functionality</td>
<td>.067</td>
<td>9.910</td>
</tr>
<tr>
<td>System user acceptance</td>
<td>.048</td>
<td>2.921</td>
</tr>
<tr>
<td>System integration</td>
<td>.012</td>
<td>8.895</td>
</tr>
</tbody>
</table>

| System automation                                        | .099               | 9.051      |
| System functionality                                     | .066               | 5.041      |
| System user acceptance                                   | .047               | 2.398      |
| System integration                                       | .012               | 8.041      |
| Micro environmental factors                              | .968               | 1.033      |

Source: Survey Data, (2014)

The relevant column figures for VIF and tolerance statistics from table 4.9 show that the values are within the acceptable range. Therefore the results and conclusions of hypotheses tests reported in this study are not biased by the influence of multicollinearity.
4.6 Test of Hypotheses

This study tested all the five hypotheses using multiple regression analysis, and the results interpreted according to the values of t, R² and F values at the 95% level of significance. The regression analysis results are shown in table 4.8 below for the first four hypotheses of the study.

Table 4.10 Regression analysis for the Direct Relationship between Dimensions of Technology based CRM and Service quality

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
</tr>
<tr>
<td>R</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>.356a</td>
</tr>
</tbody>
</table>

<p>| ANOVA                                           |</p>
<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1.594</td>
<td>4</td>
<td>.398</td>
<td>.464</td>
<td>.041a</td>
</tr>
<tr>
<td>Residual</td>
<td>63.547</td>
<td>74</td>
<td>.859</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>65.141</td>
<td>78</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coefficientsa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
<tr>
<td>Automation</td>
</tr>
<tr>
<td>Functionality</td>
</tr>
<tr>
<td>User Acceptance</td>
</tr>
<tr>
<td>System Integration</td>
</tr>
</tbody>
</table>

Dependent Variable: Service Quality

Source: Survey Data, (2014)

The Regression model used to express the relationship between the independent and dependent variables from the summary provided above is shown in model 1:

\[ ServQual=3.71-0.109\text{Aut}-0.244\text{Func}-0.588\text{UsAcc}+0.814 \text{SysInt} \ldots \text{Model I} \]

Where:
ServQual=Service Quality, Aut= System automation, Func=System functionality, UsAcc=System user acceptance, SysInt= System integration
The regression model explains 24% variation in service quality as accounted for by the four dimensions of technology ($R^2=0.24$). The $R^2$ value of 0.24 implies that technology based CRM explains the variation of service quality by 24%. The findings of the study done by Reinartz et al (2004) revealed that CRM systems may not lead into desired results, it may even yield negative results if the CRM systems are not integrated with other marketing practices and business activities at large (McDonald & Christopher, 2003). The regression model is significant as shown from the Anova table values ($F=0.464: p<0.05$).

4.6.1 Test of Hypothesis One

The first hypothesis sought to test the relationship between system automation and service quality, and the hypothesis was tested using multiple regression equation. The results are illustrated in the table 4.10.

The Beta coefficient of System Automation of -0.109 indicates that the direction of the relationship between System Automation and Service Quality is to a very small extent and negative. The statistical level of significance for this variable is $p=0.766$. The results from the analysis suggest that the null hypothesis is accepted. This leads to the conclusion that there is weak negative relationship between system automation and service quality that is not statistically significant.

The conclusion made from this hypothesis judged from previous researches shows that installation of technology based CRM software alone is not enough to ensure that CRM program will be successful and profitable. As Reinartz et.al (2004) indicated, a mere implementation of
technology based CRM may not lead into desired results, and that at some other time it may even yield negative results. Using the arguments of the IT based model, it is possible to provide an explanation on the findings on hypothesis one. This theory provides support for the adoption of IT based service options among service providers. It presents the argument based on the anticipated relationship between IT based services and customers perception of service quality.

This aspect of the perception of the customers is important in determining whether the IT system in place is perceived to be enhancing the level of quality that the customers obtain. In the literature review, the study had raised the need for the integration of TQM models with the servqual model and identified the dimensions of quality connected with the aspects of perceived quality. This dimension is one that is psychological in nature in the mind of the customer. While the mobile phone companies have adopted Technology based CRM, such initiatives may have ignored the perceptions of the market. In marketing, consumer perceptions are considered important in driving customer purchase intentions and actual purchases.

Also, McDonald and Christopher, (2003) presented the view that CRM is a concept that is highly supported by an integrated approach involving strategy, marketing and information technology. The results of hypothesis one may be indicative of the fact that the mobile phone companies have not achieved the required levels of integration among the areas of marketing strategy, marketing dimensions and the companies information technology and thus CRM fails to give optimal results that would offer a positive relationship between system automation and service quality.
4.6.2 Test of Hypothesis Two

The second hypothesis was meant to test the relationship between system functionality and service quality. The beta coefficient for the independent variable is -0.244, which indicates that the relationship between system functionality and service quality is negative. The statistical level of significance for system functionality (P value) is 0.584. Since the p value is greater than 0.05, the study accepts the null hypothesis and concludes that there is no a statistically significant relationship between system functionality and Service Quality in the telecommunication industry in Arusha.

The conclusion made from this hypothesis is supported by the findings of some of the previous studies reviewed in the literature section. Reinartz et al. (2004) in their study found that CRM process performance link was not strong and therefore suggested that the improvement of CRM implementation process is needed in ensuring a strong link between CRM process and performance. According to Curry and Kkolou, (2004) successful implementation of CRM largely depends on how well the internal marketing is managed and developed. Boone and Kurtz, (2004) and Dyche, (2002) also added that successful CRM relies on the firm’s investment in training and interdepartmental communication. For technology based CRM to be successful telecom companies may need to invest in internal marketing as well as integrating marketing systems with other aspects of business such as organization culture and structure and other systems that support operations in the companies.
4.6.3 Test of Hypothesis Three

The third hypothesis sought to test the relationship between system user acceptance and service quality using multiple regression equation. The beta coefficient for the independent variable is -0.588, which indicates that the relationship between system user acceptance and service quality is negative. The statistical level of significance for system user acceptance (P value) is 0.021. Since the p value is less than 0.05, the study fails to accept the null hypothesis and concludes that there is a statistically significant negative relationship between system user acceptance and Service Quality in the telecommunication industry in Arusha.

The conclusion of hypothesis three can be argued from theoretical a point of view, using the theories reviewed in this study. The Technology Acceptance Model argues that perceived usefulness and perceived ease of use of the existing information technology systems determine how users accept and use technology. However perceived usefulness and perceived ease of use determine the attitude toward using information technology systems, behavioral intentions to use IT system and actual use of IT system. On the other hand the Unified Theory of Acceptance and Use of Technology (UTAUT) argues that the four constructs that determine the behavioral intention and usage behavior of users of IT systems are moderated by age, gender, experience and voluntariness. The four constructs include performance expectancy (functionality), effort expectancy (user acceptance), social influence and facilitating conditions (system integration).

This indicates that having the existing IT systems in the company alone is not enough to determine the behavioral intentions (future plans) and usage behavior (actions) but it has to be
moderated by the age, gender, experience and voluntariness of use. As a result, the telecommunications companies in Arusha have installed technology based marketing functions systems to assist in raising the level of service quality but without taking into consideration other factors that can determine future plans and actions of marketing functions systems in contributing to the service quality improvement. The study noted that majority of the employees working in these telecom companies who responded to the questionnaire were aged between 26 years to 45 years. Even though the study did not assess the likely influence of the demographic factors of the respondents, the age factor may have potential influence in determining behavioral intentions and usage behavior of the IT users.

4.6.4 Test of Hypothesis Four

The fourth hypothesis was meant to test the relationship between system integration and service quality. The beta coefficient value is 0.814 implying that the relationship between system integration and service quality is positive. The p value is 0.043 which is less than 0.05. The results from the analysis meet the condition for failing to accept null hypothesis, which leads to the conclusion that there is statistically significant positive relationship between system integration and service quality.

The conclusion made in this hypothesis is supported by the findings of the study done by Maklan and Knox, (2008), who suggested that the success of technology based CRM highly depends on the level integration of business systems and activities within a company. However, Maklan and Knox, (2008) pointed that technology based CRM success highly depends on the appropriate integration of business processes, people and business activities that are put in place.
harmoniously. Thomson et al. (2009) added that integration of CRM resources with other departments is important in ensuring service customer satisfaction. The integration is well facilitated by the presence of organizational culture that provides conducive environment that support integration of CRM activities with other business activities.

Egan’s (2008) study had pointed that the marketing orientation that a company adopts is highly supported by the existing organizational culture. The Marketing philosophy is characterized by integration of functions within a company, customer focus of both internal and external marketing, profitability, competitiveness and careful planning. Along the customer focus perspective of this philosophy, it is argued that companies should not only pay attention to external markets but also to internal markets because the well managed internal markets are better off in organizing the internal activities of the organization and enhancing superior customer service that can positively impact the level of service quality.

The findings of this hypothesis are also supported by the theoretical arguments of CRM Pyramid Model and the IDIC Model. These models indicate that a customer is a priority and a central focus to a firm, and therefore all the products and services offered to this customer should conform to needs. This is possible when the firms adopt an organizational culture that will allow the integration of appropriate marketing philosophy that consists of perfect marketing mix strategies. For the firms to be able to accommodate that, a strong base of suitable information technology based CRM is required in building a closer relationship with customers. However
building relationship with customers entails a process with a number of steps and this process requires integration of business activities at each stage of the process.

The first step is identifying customers to the business and builds a deep understanding of them in terms of their behavior and needs. The second step is differentiation; a company has to differentiate their customers by identifying which customers have most value now and which offer most for the future. The third step is interaction, where by a company interacts with customers to ensure that customers’ expectations are well understood, this step is crucial because it is where company gets a chance to relate and work together with customers through customer service touch points such as call centers and points of sale.

In the case of mobile phone companies, this step is crucial too and has a positive impact on the level of service quality and signifies that customer service and service quality relate positively. The last step in building relationship with customers is customization; this step requires a company to customize its offers and communications to ensure that expectations of customers are met. Thus, through the findings of hypothesis four, it is observed that telecommunications companies in Tanzania have installed technology based CRM system that supports the integration of business activities and processes to ensure service quality to its customers.

The first four hypotheses testing the direct relationship between technology based CRM and service quality offer some lessons to marketers. First, it is clear from the descriptive findings that while the independent variables measured at relatively high levels (Mean=4), that on the variable
of service quality measured at relatively low level \((Mean=3)\). Particularly in the service quality variable, important areas of understanding needs, delivering services, meeting expectations, providing communication, consistency of services, tailored services, ensuring right attributes, required speed and professionalism scored low. The previous study done by Leisen and Vance, (2001) argued that dimensions of service quality may vary across international contexts by the types of service. This therefore presents some understanding on the situation prevailing in the mobile sector in Tanzania.

Secondly, the findings reported provide an understanding on how technology can be implemented and utilized in organizations to play an increased role in CRM. Even though the previous study by Thomson et al., (2009) had raised the need for understanding how technology can play this greater role in CRM, the study had not offered an explanation on how technology can play a greater role in CRM. The explanations offered for the four hypotheses based on the existing relationship between technology based CRM and service quality indicated that the needed aspects for technology based CRM to play this increased role are internal marketing, organizational culture, customer perception (psychological state) and adoption of the provisions of the marketing philosophy leaning towards customer orientation.

4.6.5 Test of Hypothesis Five

Hypothesis five tested the moderating effect of micro environmental factors on the relationship between technology based CRM and service quality. The testing of this hypothesis involved three steps, step one is illustrated in table 4.9, where the relationship between technology based CRM and service quality was tested without the presence of the moderating factor. Step two
involved moderator variable and Service quality variable and the third step involved, all the variables, technology based CRM variables, service quality variable and micro environmental factors variable.

**Step 2: Moderator and the Dependent Variables**

The results are shown in table 4.11

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>Model 2</td>
</tr>
</tbody>
</table>

**ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>132.229</td>
<td>1</td>
<td>132.229</td>
<td>5.729E3</td>
<td>.000*</td>
</tr>
<tr>
<td>Residual</td>
<td>4.824</td>
<td>209</td>
<td>.023</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>137.053</td>
<td>210</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.340</td>
<td>.043</td>
<td>7.922</td>
<td>.000</td>
</tr>
<tr>
<td>Environment</td>
<td>.901</td>
<td>.012</td>
<td>.982</td>
<td>75.688</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Service Quality

*Source: Survey Data, (2014)*

Multiple Regression modeling for testing the dependent variable and moderator variable:

\[ ServQual = 0.340 + 0.982 \times \text{MicroEnv} \ldots model 2 \]

Where:

- ServQual=Service quality
- MicroEnv=Coefficient of micro environment as the moderating factor
Step 3 Independent, Dependent and Moderator Variables

The results are shown in table 4.12.

Table 4.12 Regression analysis for the relationship between Independent, dependent and Moderator variables

<table>
<thead>
<tr>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
</tr>
<tr>
<td>Model 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
</tr>
<tr>
<td>Regression</td>
</tr>
<tr>
<td>Residual</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>coefficients(a)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
<tr>
<td>Environment</td>
</tr>
<tr>
<td>Automation</td>
</tr>
<tr>
<td>Functionality</td>
</tr>
<tr>
<td>User Acceptance</td>
</tr>
<tr>
<td>System Integration</td>
</tr>
</tbody>
</table>

\(a\). Dependent Variable: Service Quality

*Source: Survey Data, (2014)*

The results from the three steps are summarized in table 4.13.
### Table 4.13 Summary of Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Model 1: Independent and Dependent</th>
<th>Model 2: Moderator only</th>
<th>Model 3: Independent and Moderator present</th>
<th>Direction of Change after moderation</th>
</tr>
</thead>
<tbody>
<tr>
<td>β System Automation</td>
<td>-0.109*</td>
<td></td>
<td>0.063*</td>
<td>Positive but not significant</td>
</tr>
<tr>
<td>β System Functionality</td>
<td>-0.244*</td>
<td></td>
<td>0.107*</td>
<td>Positive but not significant</td>
</tr>
<tr>
<td>β System User Acceptance</td>
<td>-0.588**</td>
<td></td>
<td>0.081**</td>
<td>Positive and significant</td>
</tr>
<tr>
<td>β System Integration</td>
<td>0.814**</td>
<td></td>
<td>-0.224**</td>
<td>Negative and significant</td>
</tr>
<tr>
<td>β Micro Environment</td>
<td></td>
<td>0.982***</td>
<td>0.985***</td>
<td>Positive and significant</td>
</tr>
<tr>
<td>R²</td>
<td>0.24</td>
<td>0.965</td>
<td>0.964</td>
<td>Marginal increase</td>
</tr>
<tr>
<td>β Constant</td>
<td>3.741***</td>
<td>0.340***</td>
<td>0.294***</td>
<td>Negative and significant</td>
</tr>
<tr>
<td>F</td>
<td>0.464**</td>
<td>5.729E3***</td>
<td>389.739***</td>
<td>Regression model significant</td>
</tr>
</tbody>
</table>

*Not significant at p<0.05; **Significant at p<0.05; ***Significant at p<0.000

Source: Survey Data, (2014)

Beta Coefficients of the variables were used to determine the direction of change with and without the moderating effect of micro environmental factors on the earlier established relationship between the independent and dependent variables. Step one involved testing the relationship between technology based CRM variables and service quality in the absence of the moderating factor. The beta coefficient of system automation, system functionality, system user acceptance and system integration were -0.109, -0.244, -0.588 and 0.814 respectively. The first two variables were not significant while the last two were statistically significant at p<0.05. The $R^2$ was 0.24.

Step two involved testing the moderating effect of micro environmental factors on service quality, the beta coefficient of micro environment factors was positive implying that the direction of the relationship between micro environmental factors and service quality is positive. The $R^2$ for the relationship between the moderator and the dependent variables is 0.965 indicating that...
the strength of the relationship is very strong. Therefore, there is strong relationship between micro environmental factors and service quality.

The third step tested the relationship between technology based CRM variables and service quality when the moderator was present. The beta coefficient of system automation, system functionality, system user acceptance and system integration rose from -0.109, -0.244, -0.588 and 0.814 to 0.063, 0.107, 0.081 and -0.224 respectively. There was a significant increase in the value of $R^2$ from 0.24 without the moderating factor to 0.964 when the moderating factor was introduced. The p value improved from $p=0.041$ without moderator variable to $p=0.00$ with moderator variable indicating that the level of statistical significance was enhanced. The study therefore concludes that micro environmental factors have a positive moderating effect on the relationship between technology based CRM and service quality in the telecommunications companies in Arusha. The alternate hypothesis is accepted.

The conclusion of this hypothesis can be theoretically supported. The arguments derived from UTAUT theory suggest that technology based CRM alone is not sufficient in increasing the level of service quality in a service based industry, there are other factors both from the internal environment factors (such as internal marketing) and external environment factors (such as competitors and suppliers) within which a firm operates, and these factors highly determine the level of service quality.
The findings on the fifth hypothesis testing the moderating effect of micro environmental factors on the relationship between technology based CRM and service quality provides lessons in relation to the work of Materu and Diyamett (2010). Even though this previous study done by Materu and Diyamett, (2010) established that the level of customer service was poor, their study did not offer explanations on the set of theoretical and contextual factors that led to the prevailing situation in telecom industry in Tanzania in terms of service quality. This study has highlighted the theoretical and contextual factors leading to the situation; some of which are the moderating factor (micro environmental factors) and internal marketing concepts.
CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This is the last chapter in this study and it presents a summary, conclusion and recommendations of the study basing on the objectives of the study.

5.2 Summary

This study intended to gain knowledge on the effect that technology based Customer Relationship Management has on service quality in telecommunications industry in Arusha, Tanzania. The study stated five objectives that responded to the problem of the study. Since the study was measuring the effect of technology based CRM on service quality, the population of the study included both mobile phone operators, distributors and mobile phone subscribers (customers) in Arusha. A total number of 226 mobile subscribers in Arusha were administered with the questionnaires, and 97 respondents from mobile phone operators and their distributors (marketing, sales, customer care IT and operations departments), this made a total sample size of 323. The primary data was collected using questionnaire method of data collection, and the data was collected at one period of time around June - August 2014.

The study found that all the independent variables which are system automation, system functionality, system user acceptance and system integration scored aggregate mean scores rated at the level of a good extent. The dependent variable which is service quality measured at a relatively lower level of fair extent. The study interpreted the findings in the light of the theories that supported the study as well as the findings of other previous studies and observed that the
findings were in agreement with theory and the previous studies. The moderating variable measured at the level of good extent and the study interpreted this mean score level to imply that the mobile telecommunications industry pays attention to these external factors which in turn influence the relationship between technology based CRM and service quality.

The study sought to answer five objectives, namely assessing the effect of CRM system automation in service quality in the Telecommunications Industry in Arusha, the effect of CRM system functionality on service quality in the Telecommunications Industry in Arusha, the effect of CRM system user acceptance on service quality in the Telecommunications Industry in Arusha, the effect of CRM system integration on service quality in the Telecommunications Industry in Arusha and the moderating effect of micro environment factors on the relationship between technology based CRM and service quality in the Telecommunications Industry in Arusha.

The first objective sought to understand the effect of CRM system automation on service quality in the telecommunications industry in Arusha. The results from the test of hypothesis one showed that there was weak and negative relationship between CRM system automation and service quality and that the relationship was not statistically significant in mobile phone companies in Arusha.

The results of this hypothesis test were found to be consistent with previous empirical work and theoretical frameworks. The study offered an explanation on the findings using the suggestions
of the previous empirical work and theories. The main explanation given tended to indicate that even though IT based CRM has been adopted to meet the expectations suggested by the researchers and theorists, the attempts have ignored the perceptions of the market. From this hypothesis, it can be concluded that even though there is a negative and weak relationship between sales force automation and service quality yet CRM is important in supporting service quality, both the perceived importance and benefit are realized when the customer perceptions are integrated. The organizations in this industry therefore will need to adopt the integrated marketing perspective whereby the design of marketing mix based strategies rely on a proper understanding of the customer perceptions.

Based on these facts, it can therefore be concluded that integrated marketing plays a role in explaining the relationship between CRM and service quality.

The second objective sought to examine the effect of CRM system functionality on service quality in the mobile phone companies in Arusha. To answer this objective the relationship between CRM system functionality and service quality was tested to determine whether there was a statistically significant relationship. The results of the hypothesis testing presented indicated that there was statistically significant relationship between CRM system functionality and service quality in the telecommunication industry in Arusha. The strength of the relationship between technology based customer service and service quality was negative and weak, and appropriate explanations were provided from the findings of previous studies reviewed.
The study provided an explanation to this hypothesis from the previous studies that suggested that CRM system functionality success depends on how well the internal marketing (employees) is managed and developed through training and interdepartmental communication. Having technology based CRM system in place is not enough in delivering high service quality, because this systems cannot run themselves, but rather they depend on the employees not only in operating these systems, but also using the system in assisting customers. This indicates that, a company may have information technology systems that support system functionality, which alone is not enough to determine the level of service quality, because effectiveness of employees in performing their tasks counts on the level of service quality offered. From the findings of hypotheses two, it can be concluded that even though telecommunication companies in Arusha have invested in information technology that support CRM system functionality, they have however paid less attention to internal marketing that would have enhanced the level of service quality.

Objective three intended to establish the effect of CRM system user acceptance on service quality in the Telecommunications Industry in Arusha. The relationship between system user acceptance and service quality was tested. The findings of the analysis showed that there was weak relationship between marketing functions and service quality, and the direction of the relationship was negative. The findings indicated that there was statistically significant relationship between CRM system user acceptance and service quality in telecommunication companies in Arusha. The arguments from theoretical reviews held the view that companies should not just rely on the IT systems to bring about the desired behavioral intentions and usage
behavior, because relying on that alone can lead into weak CRM process performance. The study offered a suggestion for overcoming this based on the need to incorporate aspects of age, gender and experience of the users of the systems when employing the CRM systems so as to ensure a strong link between CRM process and performance whose effectiveness rely up on the users. The study therefore concludes that even though the test of hypothesis suggested that there is weak and negative direct relationship between system user acceptance and service quality, yet telecommunications companies have an opportunity to make this relationship strong through integration of demographic characteristics specifically age and education that can influence high performance in marketing functions that can contribute to service quality.

Objective four intended to establish the effect of CRM system integration on service quality in the Telecommunications Industry in Arusha. The relationship between CRM system integration and service quality was tested. The findings of the analysis showed that there was strong relationship between CRM system integration and service quality, and the direction of the relationship was positive. The findings indicated that there was statistically significant relationship between CRM system integration and service quality in telecommunication companies in Arusha. The arguments from empirical reviews commented that the presence of technology based CRM systems alone is not enough to determine the level of CRM success in attaining high level of service quality, but rather, integrating marketing philosophy and other organization functions is vital in determining technology based CRM success. Therefore, the study suggests that, telecommunications companies should consider the integration of marketing
philosophy and other organization functions in all the stages of technology based CRM implementation process to ensure the attainment of high level of service quality to customers.

The last objective sought to determine the moderating effect of micro environmental factors on the relationship between technology based CRM and service quality. The results of the hypothesis test showed that micro environmental factors had a positive moderating effect on the relationship between technology based CRM and service quality. The arguments from theoretical reviews proposed that both internal and external environments within which a company operates can influence company’s performance positively or negatively depending on how well these environments are managed. The explanations offered raised the need for service based companies to pay attention to micro environment factors through careful planning and formulation of appropriate strategies in order to ensure to use the Technology based CRM to fit well in the environment. Based on the facts of hypothesis five of the study, it is therefore concluded that telecommunication companies need to create strategies to adapt to the external environment of which companies have no control of because these external factors influence company’s capacity to produce and serve the market.

5.4 Conclusion

The study sought to understand the effect of technology based CRM on service quality, and the influence that micro environmental factors have on the relationship between technology based CRM and service quality. From the findings presented and the explanations offered, this study makes five conclusions. First, the study concludes that in the context of the telecommunication industry in Arusha Tanzania, CRM system automation affects service quality negatively and
companies can attain higher levels of influence of system automation to service quality by integrating customers’ perception of service quality with CRM system automation. Second, CRM system functionality has a significant negative influence on service quality, and that companies can enhance that relationship by integrating internal marketing as well as cultivating organizational cultures that will improve the level of service quality. Third, CRM system user acceptance has a negative effect on the level of service quality and that companies in telecommunications industry can improve this relationship by considering demographic characteristics particularly age and education of IT systems users that may have an influence in system user acceptance.

Fourth, CRM system integration has a positive effect on the level of service quality and that companies in telecommunications industry can enhance the strength of this relationship by creating a close link and integration between technology based CRM systems, marketing philosophy and business functions. Lastly, the study concludes that, micro environmental factors affect the relationship between technology based CRM and service quality in telecommunications companies in Arusha, and thus it is important that service based companies develop strategies to adapt well to the external environment so as to fit well in their micro environments.

5.5 Recommendations for Policy

In view of the findings and conclusions of the study reported, the research makes three recommendations to the mobile phone operators based on the objectives of the study that were found to have significant relationships. The study provides recommendations for the purpose of
improving technology based CRM performance in mobile phone companies. In line with the third objective, the study suggests that service based companies should consider integration of demographic characteristics such as age and education of system users since these characteristics determine the performance of users which influence the quality of service. For the fourth objective, the study recommends that it is important for service based companies continue investing in system integration that will support the integration of technology based CRM with other business activities. Lastly, in line with the fifth objective of this study, it is recommended that it is crucial for service based companies to formulate strategies that will enable them to survive in the changing business environments, since these environments affect firms’ activities.

5.6 Recommendations for Further Research

The findings and conclusions presented by the study have two limitations. First, even though the study obtained some demographic data from respondents, the study did not test the influence of these demographic factors to ascertain the possibility of an association with the variables in the study. Secondly, even though in the theory and previous empirical findings, internal marketing was used to offer explanations on the findings of this study, the study did not include measures of internal marketing so as to assess the exact role it would play.

In view of the limitations cited, the study makes three recommendations for future research. First, this study recommends further research to test the impact of the demographic factors of age, education and psychological state of individual users of technology based CRM to determine the level of service quality. The second area is on the use of non parametric statistics like Chi-square test of association to assess any possible association between technology based
CRM and user demographic characteristics. The third area is on integrating internal marketing and corporate cultures with technology based CRM to determine the level of service quality.
REFERENCES


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Thompson, B. (2001). What is CRM? The Customer Relationship Primer, 2nd ed. (online) 15 (1)


Appendix 1: Questionnaire for Mobile Phone Operator

INTRODUCTION
This questionnaire is designed to obtain information from mobile phone service providers and distributors on several dimensions that facilitate service delivery. The information obtained from respondents will be used for academic purposes only. All responses will be handled with high confidentiality. You are required to respond to the various statements in different sections of the questionnaire according to the guidelines provided in each section.

SECTION A: DEMOGRAPHIC INFORMATION
Dear respondent, please tick the category relevant to you.

(i) Gender: male    female

(ii) Age: 18 – 25    36 – 45    56 – 65
          26 – 35    46 – 55

(iii) Mobile phone operator: Vodacom    Airtel
     Zantel    Tigo

(iv) Education level: Secondary    Diploma    Degree
     Masters    PhD

(v) Residence ……………………………

SECTION B: TECHNOLOGY BASED CUSTOMER RELATIONSHIP MANAGEMENT
This section is about the systems put in place by the company to enhance relations with customers. You are required to respond to the statements below according to a scale of 1-5, where:
1=Not at All    2=To very low Extent    3= To a Fair Extent
4=To a Good Extent    5=To a Very High Extent

<table>
<thead>
<tr>
<th>STATEMENTS</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRM Systems automation</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>I believe that the existing technology facilitates relevant data capturing</td>
<td></td>
</tr>
<tr>
<td>I believe that the existing technology enables automation of business</td>
<td></td>
</tr>
<tr>
<td>activities</td>
<td></td>
</tr>
</tbody>
</table>
The company has computerized most of the work systems
Most of the work equipment are computer automated

**CRM System functionality**
I believe that the ICT system is managing information quite well
The existing technology is perceived to be useful
The system is reliable in performing work related tasks
The technology in use in this company meets the basic business requirements
The existing technology processes and avails information as required by users

**CRM System user acceptance**
All the employees in the company have accepted the ICT system used in the company
All employees in the company can easily use the existing information processing system
The system is relatively easy to work with by all members
Members of staff are always willing to use the ICT system in their daily work activities
All employees have faith in the existing ICT System used by the company
All employees believe that the ICT System in use facilitates performance improvement

**CRM System integration**
The existing ICT System enables data sharing within the company
The company has invested in equipment, machines and personnel to support the existing ICT System
The existing ICT System allows interactions among users in different areas of the company
The existing ICT System has well integrated the various company departments

### SECTION C: MICRO ENVIRONMENT FACTORS
This section is concerned with the micro environment factors that influence activities carried out by the company. Kindly respond to the statements below to express your opinion on how well you think it is functioning in a scale of 1-5, where:

1=Not at All  2=To some Extent  3= To a Fair Extent  4=To a Good Extent  5=To a Very High Extent

<table>
<thead>
<tr>
<th>Competition</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>The company is incurring high fixed costs in running its daily activities</td>
<td></td>
</tr>
<tr>
<td>The exit barriers to the company are too high</td>
<td></td>
</tr>
<tr>
<td>Much of the competition in this industry involves pricing</td>
<td></td>
</tr>
<tr>
<td>This company is highly investing in advertising</td>
<td></td>
</tr>
<tr>
<td>This company often introduces new services and product in the market</td>
<td></td>
</tr>
<tr>
<td>This company uses different competitive marketing strategies</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Suppliers</th>
<th>Responses</th>
</tr>
</thead>
</table>
The company's suppliers form an important link in the company's overall customer value delivery system.

Suppliers' problems can seriously affect marketing activities.

The company suppliers are raising supplying costs when supplying important inputs.

The company suppliers change the quantity they are ought to supply.

The costs of switching suppliers are high.

There are few substitutes of inputs that the suppliers supply to the company.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>The company's suppliers form an important link in the company's overall customer value delivery system</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suppliers' problems can seriously affect marketing activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The company suppliers are raising supplying costs when supplying important inputs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The company suppliers change the quantity they are ought to supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The costs of switching suppliers are high</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are few substitutes of inputs that the suppliers supply to the company</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THANK YOU FOR YOUR TIME AND RESPONSES
Appendix 2: Questionnaire for Customers

INTRODUCTION
This questionnaire is designed to obtain information from mobile phone subscribers on several dimensions of service quality. The information obtained from respondents will be used for academic purposes only. All responses will be handled with high confidentiality. You are required to respond to the various statements in different sections of the questionnaire according to the guidelines provided in each section.

SECTION A: DEMOGRAPHIC INFORMATION
Dear respondent, please tick the category relevant to you.
(i) Gender: male □ female □
(iii) Your Mobile phone service provider:

- Vodacom □
- Airtel □
- Zantel □
- Tigo □
(iv) Education level: Primary □ Secondary □ Diploma □

- Degree □ masters □ PhD □
(v) Location ........................................
(vi) Place (s) you shop for airtime .................................................................
## SECTION B: SERVICE QUALITY

This section is about service quality, which reflects how well a delivered service conforms to your expectation(s). Kindly respond to the statements below according to a scale of 1-5, where:
- 1=Not at All
- 2=To some Extent
- 3=To a Fair Extent
- 4=To a Good Extent
- 5=To a Very High Extent

My mobile phone operator serves me as a customer by doing the following:

<table>
<thead>
<tr>
<th>EMPATHY</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>✪ Understanding my needs</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>✪ Delivering the services I need</td>
<td></td>
</tr>
<tr>
<td>✪ Meeting my expectations</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TANGIBILITY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>✪ Providing an office where I can physically go and make inquiries</td>
<td></td>
</tr>
<tr>
<td>✪ Providing communication materials like posters, billboards and others</td>
<td></td>
</tr>
<tr>
<td>✪ The distribution channels of scratch card and phones are easily accessed</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RELIABILITY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>✪ The company is ready to serve me any time</td>
<td></td>
</tr>
<tr>
<td>✪ The company has been consistent in its service delivery service</td>
<td></td>
</tr>
<tr>
<td>✪ The company is willingness to provide tailored services to my unique needs</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ASSURANCE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>✪ The company Ensures that the products and services offered have the right attributes</td>
<td></td>
</tr>
<tr>
<td>✪ The company is committed to Constantly improving products and services characteristics</td>
<td></td>
</tr>
<tr>
<td>✪ The company Provides services at the required speed</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RESPONSIVENESS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>✪ The company Demonstrates competence when delivering the services</td>
<td></td>
</tr>
<tr>
<td>✪ The company ensures professionalism when offering services</td>
<td></td>
</tr>
<tr>
<td>✪ The company Responds to my needs and inquires on time</td>
<td></td>
</tr>
<tr>
<td>✪ The services offered Conform to my preference as a customer</td>
<td></td>
</tr>
</tbody>
</table>

**THANK YOU FOR YOUR TIME AND RESPONSES**