

**TOTAL QUALITY MANAGEMENT AND PERFORMANCE OF MOBILE  
TELECOMMUNICATION FIRMS IN KENYA**

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**DECLARATION**

This research project proposal is original work and has not been presented for award of any degree in any university.

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

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## ABSTRACT

A firm can gain competitive advantage if it is able to create value for its buyers through the strategy of cost leadership, by becoming a low cost producer, the strategy of differentiation by offering a different product, a different delivery system, or using a different marketing approach and focus strategy that enables them to focus on certain market segment. The objective of the study was to determine the extent of implementing TQM practices (leadership, effective communication, customer focus, suppliers relations, training and education, employees empowerment, continuous improvement and process improvement) by the mobile telecommunication firms in Kenya and establish the relationship between the implementation of total quality management practices and organizational performance (quality, innovation and financial) in the mobile telecommunication firms in Kenya. The Research design adopted for this study was descriptive case study. The study carried out census survey on 5 mobile telephone operators in Kenya: Safaricom Limited, Airtel Networks Kenya Limited, Orange Telkom Kenya Limited (Orange), and Finserve Africa Limited (Equitel) and Sema Africa Limited as per the Communication Authority of Kenya. Data was collected using closed ended questionnaires to the head of departments. Primary data was used in the study. The data collected for first research objective was analyzed using descriptive statistics which involved measures of central tendency to determine the extent of implementing total quality management practices. The study found that the 81.25 % of firms have implemented total quality management, 62.5% have fully implemented total quality management practices, 18.75% have either partially or none have implemented total quality management practices. Second research objective was analyzed using regression model performed by SPSS software version 20.0 Results show that there is statistically significance relationship between implementation of TQM practices and organizational performance in the mobile telecommunication firms in Kenya

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## **ABBREVIATIONS AND ACRONYMS**

<b>CAK:</b>	Communication Authority of Kenya
<b>CCK:</b>	Communications Commission of Kenya
<b>DELS:</b>	Direct Exchange Lines
<b>EFQM:</b>	European Foundation for Quality Management
<b>ERP:</b>	Enterprises Resources Planning
<b>ICT:</b>	Information and Communications Technology
<b>IP:</b>	Innovation Performance
<b>IT:</b>	Information Technology
<b>JIT:</b>	Just In Time
<b>MTN:</b>	Mobile Telephone Network
<b>OP:</b>	Organizational performance
<b>PDCA:</b>	Plan-Do-Check-Act
<b>QP:</b>	Quality Performance
<b>SCM:</b>	Supply Chain Management
<b>SIM:</b>	Subscriber Identity Module
<b>SMEs:</b>	Small Medium Enterprises
<b>SPSS:</b>	Statistical Package for Social Sciences
<b>STD:</b>	Subscriber Trunk Dialing
<b>TQC:</b>	Total Quality Control
<b>TQM:</b>	Total Quality Management



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## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background of the study**

Competition has forced many organizations to re-evaluate the competitive strategies that enable them to gain competitive advantage, remain relevant and successful in the market. According to Porter (1987), a firm can gain competitive advantage if it is able to create value for its buyers through the strategy of cost leadership, by becoming a low cost producer, the strategy of differentiation by offering a different product, a different delivery system, or using a different marketing approach and focus strategy that enables them to focus on certain market segment.

As global competition has intensified over last 20 years, process innovation of an enterprise is an inevitable necessity for survival. With today's rapid advances in technology and shortened product life cycle, it is not likely that many companies will have expertise in all the areas necessary to produce competitive goods and services. As a consequence, an increasing number of companies are focusing their attention on both continuous improvement and radical innovation to enhance their manufacturing competitiveness by using newly developed techniques and tools such as Just In Time (JIT) systems, Six Sigma, Lean Manufacturing, Enterprises Resources Planning (ERP), Supply Chain Management (SCM), and Total Quality Management (TQM) (Lee, 2012)

#### **1.1.1 Total Quality Management**

Total Quality Management is defined as holistic management philosophy that empowers every member of the organization to strive for continuous improvement in all the functions of an organization to provide superior customer value and meet

customer needs in terms of quality and innovation (Prajogo, 2005). Many researchers have stated that the TQM strategy is a potential useful tool for fostering learning and increasing company's competitive advantage (Martínez-Lorente and Martínez-Costa, 2008)

TQM practices are Leadership, effective communication, customer focus, supplier's relations, employee's empowerment, training and education, continuous improvement and process improvement. If all the practices are well implemented, organization will achieve customer satisfaction, cost effectiveness and defect free work (Peter, 1994).

According to Ehigie and McAndrew, (2005) no consensus on the date and origin source for TQM but most researchers reported the founders include; Feigenbaum (1951, 1956, 1961) TQM emerged in place of total quality control (TQC) and TQC as an effective system for integrating the quality development, quality maintenance, and quality-improvement efforts of the various groups in an organization so as to enable production and service at the most economical levels that allow for full customer satisfaction. Feigenbaum believed that all departments in organization have responsibilities for the achievement of quality, but his conceptualization of TQC did not include other management ideologies like people empowerment, teamwork, and supplier development relationships (Price, 1989). These management ideologies are now incorporated into the new management concept, TQM. Thus, TQM is an alternative to management by control (Price, 1989). Hence, Paton (1994) considered Feigenbaum as the originator of the Total Quality Management.

TQM is being used worldwide has a strategic tool to improve performance in terms of quality, productivity, customer satisfaction and profitability. Quality improvement has

become most important organizational strategies for competitive advantage (Martinez-Costa *et al*, 2008) TQM scholars have found that the TQM philosophy is most frequently practiced in the manufacturing industry (Joiner, 2007), little attention on implementation and consequent impact on organizational performance particularly for the service industry (Prajogo, 2005). TQM has significant relationship with customer related performance (Agus & Hassan, 2011).

### **1.1.2 Organizational Performance**

According to Lakhal, Pasin, and Liman (2006) organizational performance refers to how well an organization achieves its market-oriented goals as well as its financial goals. Performance can also be defined as the process of quantifying the efficiency and effectiveness of action (Kathaari, 2014)

Organizational performance (OP) can be measured by indicators of efficiency, effectiveness, relevance to stakeholders and financial viability (Mitchell, 2002). Organizational performance is affected by employee's motivation and continuous improvement to achieve performance objective (Rampersad, 2001). Organizational performance is influenced by external environment and the organizational capacity to achieve the desired performance (Mitchell, 2002).

There is a continuous need for the organization to plan on the capacity empowerment which has changed over time due to change in technology and more increasingly on the need for more innovations. The success of TQM will result in improved employees involvement and performance, superior quality, reduction of production cost, customer satisfaction and gain of organizational competitive advantage (Arumugam & Mojtahedzadeh, 2011). Organizations have also integrated their systems with their

suppliers to ensure they play a big role in achievement of their goals. This integration measures the effectiveness and efficiency of the organization quality management (Kaynak, 2003).

### **1.1.3 Total Quality Management and Organizational Performance**

A well implemented TQM in organization increases customer satisfaction (Rahman and Bullock, 2005), quality product (Agus, 2005) and improved financial performance (Hendricks and Sinfhal, 2001). Quality is the principal determinant of success in competitive environment (Deming, 1986).

Sila and Ebrahimpour (2005) concluded that TQM impact business performance. Sharma and Gadeene (2001) argued that effective TQM is holistic management philosophy and to have full potential of the TQM on OP a holistic approach of TQM should be applied rather than in piece-mail basis. Effects of TQM on performance in an organization are viewed to be a long term thing (Hendricks and Sinfhal, 2001)

Firms implement TQM to raise the competitive advantage, increase the profits, and become more innovative. Demirbag, (2006) identifies positive relationship between TQM implementation and organization performance.

### **1.1.4 The Mobile Telecommunication Firms in Kenya**

According to Tyler, Michael and Jonscher (1982), history of telecommunication in Kenya goes back to 1888 when connections to outside worlds were done through submarines cables linking to Zanzibar, Mombasa, and Dar es Salaam laid by the Eastern & South African Telegraph Company. In Kenya, the construction of a telegraph network began with a 200-mile coastal line linking the port city of Mombasa

with Lamu and extension to other part of country began in 1896 in conjunction with the building of the railway system, forming a dual "backbone" for Kenya's communications infrastructure. The extension of the telegraph line overtook railway construction, reaching Nairobi in 1898 and Kampala and Entebbe in Uganda in 1900. Telephone service soon followed. In 1908, the public telephone network began service in Nairobi, the capital, and in Mombasa. In Nairobi that year, eighteen telephone subscribers were connected.

According to Manica and Vescovi (2009), mobile telephones were first introduced in the Kenyan market in 1992, but the real diffusion of this technology and of affordable services started in 1999 when the Communications Commission of Kenya (CCK) was established and the newly privatized company Safaricom and Celtel Kenya (previously known as KenCell Communications) were licensed by CCK to provide mobile services.

Currently, there are four main mobile telephone companies in Kenya, Safaricom Limited, Airtel Networks Kenya Limited, Orange Telkom Kenya Limited (Orange), and Finserve Africa Limited (Equitel) offering cell-phone services. According to Communications Authority of Kenya (2016), operators had a combined subscription base of 38.3 million people representing a penetration rate of 89.2 per cent. Notably the fifth player, Sema Mobile Services, a Mobile Virtual Network Operator launched its services in January 2016

According to Communications Authority of Kenya, (2016) Safaircom is leading the market share with 65.6%, Airtel Networks 17.5%, Orange Kenya 12.5%, Finserve

Africa Limited 4.4% and Sema Mobile services 0.0%. Safaricom gained 2.8 per cent and 9.5 per cent of its pre-paid and post-paid subscribers respectively.

## **1.2 Research Problem**

Total Quality Management (TQM) practices and variables have influenced organizational performance. For instance, the management commitment and leadership, focus on customer satisfaction, supplier relationship, design of quality, employee's empowerment, involvement and training, benchmarking, and process controls (Dale & Cooper, 1994). TQM can also be categorized as hard and soft elements (Rahman & Bullock, 2005). Hard elements are quality tools and techniques, customer/supplier relationship, product/process relationship while soft elements include, management leadership, employees involvement, focus on customer, strategic quality planning, process controls, continual improvement and development of skills and knowledge through training (Fotopoulos & Psomas, 2009)

Over the years, mobile telecommunication firms worldwide have been affected by day to day change in technology and more demand on new innovations, pressure from regulation authorities to adhere to the new rules and need to satisfy customers who demand more from innovative products. In this regard, TQM is being used for continuous improvement of process, involvement of suppliers, new training of staff to increase efficiency in satisfying Customer needs and achieve the desired organization performance. TQM tools and procedures may vary but the fundamental philosophy and concepts are equally important to industries from manufacturing as well as service (Huq & Stolen, 1998). Importance of services industry is significantly increasing in local and international economies.

Demirbag, Tatoglu, Tekinkus, and Zaim, (2006) in their study investigated the relationship between the implementation of TQM practices and organizational performance and found there is strong positive relationship between TQM practices and non-financial performance of SMEs, while there is only weak influence of TQM practices on financial performance of SMEs.

Prajogo's (2006) study shows TQM practices such as leadership and people management result to more innovation performance and customer focus and process management are significantly related to quality performance. Oriare (2011) in his study, investigated the application of TQM and found out that despite the fact that quality management has been addressed within a firm, TQM and its underlying assumptions could also be applicable to strategy management.

Awuor and Kigathi (2012) in their study examined quality process and culture, leadership and employees involvement but did mention the intention of applying TQM in value creation and customer satisfaction. Shekoufeh and Siavash (2013) in their study of telecommunication industry in Iran concluded that TQM methods (leadership, Employee relations, customer relations, and product/ process management) could positively and significantly affect quality, innovation and organizational performance.

Kathaari (2014) in her study only examined specific TQM management practices effects on operational performance but did not examine the impact of implementing TQM in relation to the training of employees and quality designs. Ngambi's (2015) study shows only employment training and empowerment has a significant impact on financial performance and corporate social responsibility, leadership commitment,



quality control and inspection have a significant impact on cost reduction. However, none of the TQM practices appear to have a significant effect on customer satisfaction. This study seeks to answer the question: to what extent the implementation of TQM practices helps organization to achieve its performance in the mobile telecommunications firms in Kenya?

### **1.3 Research Objectives:**

- (i) To determine the extent of implementing TQM practices by the mobile telecommunication firms in Kenya.
- (ii) To establish the relationship between the TQM practices and organizational performance in the mobile telecommunication firms in Kenya.

### **1.4 Value of the Study**

The study will be significant to the Mobile Telecommunication firms in Kenya as it will aid them in achieving their aim of increasing profitability and at the same time create value and satisfaction of their customers.

The study is important to the economic growth of the country. It will not only help in trade but also will be a source of revenue to the government through taxation. The Government is charged with the responsibility of ensuring protection to both the industry players and the citizens. On the basis of the findings of this study, the Government will make informed decisions when formulating policies and investing in the telephone mobile service firms.

The Communication Authority of Kenya (CAK) is charged with the responsibility of regulating the telecommunications firms and enforcing the relevant government

policies. CAK will have in-depth information of how the mobile telecommunication firm have implemented TQM and will also help them in the benchmarking of the quality services delivered by each. The Academicians and researchers world should definitely consider the global phenomenon of TQM in enhancing competitive advantage. The study will make a significant contribution to the growing body of research on TQM. The findings may also be used as a source of reference for other researchers. In addition, academic researchers may find it useful in their study findings to stimulate further research in this area and as such form a basis of good background for further researches.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

In this chapter, contains the theoretical review, empirical studies, summary of empirical studies and Knowledge gaps, and conceptual framework that are relevant to the study.

### **2.2 Theoretical Review**

This section contains review of theories relevant to the research subject matter. The theories reviewed are: Deming theory, Joseph-Juran theory, and European Foundation Quality Model

#### **2.2.1 Deming Theory**

Deming's theory of Total Quality Management rests upon fourteen points of management he identified, the system of profound knowledge, and the Shewart Cycle (Plan-Do-Check-Act). Deming "14 Points." are principles that help guide companies in achieving quality improvement (Mokamba, Gakure, and Keraro, 2013). The system of profound knowledge consisted; system appreciation - an understanding of the way that the company's processes and systems work, variation knowledge - an understanding of the variation occurring and the causes of the variation, knowledge theory - the understanding of what can be known and psychology knowledge - the understanding of human nature. Plan-Do-Check-Act (PDCA) is a cycle created for continuous improvement (Scudder, 2013).

Deming believed management is responsible for 94% of quality problems, and quality must be built into the product to achieve a high level of excellence. Deming philosophy begins with top management but maintains that a company must adopt the fourteen points of this system at all levels (Ali and Abedalfattah, 2012). He also

stresses the responsibility of top management in quality (Manu, 2011; Ngambi and Nkemkiafu, 2015; and Reids & Sanders, 2013).

### **2.2.2 Joseph-Juran theory**

Joseph-Juran is responsible for the "Quality Trilogy." (Scudder, 2013) The quality trilogy is quality planning, quality improvement, and quality control (Goetsch and Davis, 2010). If a quality improvement project is to be successful, then all quality improvement actions must be carefully planned out and controlled (Scudder, 2013).

Juran (1951), developed the 10 quality improvement steps which are summarized as: Build awareness of the need and opportunity for improvement, Set goals for improvement, Organize to reach the goals (establish a quality council, identify problems, select projects, appoint teams, designate facilitators), Provide training, Carry out projects to solve problems; Report progress, Give recognition, Communicate results, Keep score, Maintain momentum by making annual improvement part of the regular systems and processes of the company which were aimed to improve quality in the organization (Mokamba, Gakure, and Keraro, 2013).

### **2.2.3 European Foundation Quality Model**

The European Foundation for Quality Management (EFQM) Model is based upon nine criteria for quality management (Mokamba, Gakure, and Keraro, 2013). EFQM Model is based upon nine criteria for quality management (Scudder, 2013). These nine criteria's are focus on customers, results, visionary leadership, processes, employees training and involvement, continuous learning, supplier's partnerships and social responsibility (Scudder, 2013).

According to Ali and Abedalfattah (2012), this model do not focus solely on either product or service perfection or traditional quality management methods, but consider a wide range of management activities, behavior and processes that influence the quality of the final offering. These models provide a useful framework which firms can evaluate their TQM implementation practices, seek improvement opportunities, and the end results. These quality award models provide a worldwide framework for evaluating aspects of TQM practices in a firm. The models emphasizes the importance of leadership, supplier quality management, employee relations, strategy and policy, information, customer focus, and process management (Ali and Abedalfattah, 2012).

### **2.3 TQM Practices**

Leadership is essential for the effective implementation of TQM practices. Deming, Joseph-Juran, Taguchi, Ishikawa, Feigenbaum and Crosby emphasized that visionary leadership and the commitment of top management is the uppermost vital element of TQM implementation (Alamutu, Hotepo, Oyeobu & Nwatulegwu, 2012; Awuor & Kigathi, 2012; Khan, 2010). Top management performs various crucial functions such as offering an organization the physical and leadership needs, coaching employees and approving various organizational changes and training needs (Alamutu et al., 2012; Kathaara, 2014; Oduor, 2015).

Effective communication is an essential element in the success of any organization. According to Fening et al. (2013), managers spend much of their time daily communicating crucial information with various organizational stakeholders such as employees, suppliers, shareholders and customers. For instance, the implementation of TQM principles in an organization requires managers to communicate it to their

employees because the successful implementation of such principles relies heavily on total employee involvement.

Customer focus is an essential element in the implementation of TQM because the customer dictates the market in the current business environment. According to Fening et al. (2013) and Khan (2010), the satisfaction of the customer is the key focus of the TQM philosophy. It is, therefore, crucial for any organization to prioritize the customer in every decision making process. For example, the customer should be actively involved in the product/service design and development process so as to provide the necessary inputs that are essential for preventing waste, flaws and quality issues (Fening et al., 2013).

Supplier relations (external cooperation) are crucial in quality management since the materials supplied are usually a main source of quality problems. To produce quality products and services, manufacturers require quality supplies from their suppliers (Fening et al., 2013). Supply chain management entails several principles such as involving suppliers in product development, offering training and technical assistance to suppliers, having a small circle of suppliers and assessing suppliers on the basis of quality (Sila & Ebrahimpour, 2005 as cited in Oduor, 2015).

Employee empowerment/workforce management is a crucial factor in the achievement of any organizational goal. According to Kathaara, 2014, Fening et al. (2013) and Oduor (2015), employee participation in quality practices is crucial in achieving quality improvement. Employee empowerment entails promoting teamwork, providing the necessary training to employees and ensuring total employee involvement in the making of quality decisions (Kaynak, 2003 as cited in Oduor, 2015). It is crucial to

note that the success of any TQM program highly depends on the participation of employees in the entire TQM process.

Training and education ensures the acquisition of new knowledge that contributes to continual learning and development. Learning does not only promote creativity, but also rewards experimentation and research, gives room for open arguments and enhances both personal and group efficiency and effectiveness (Auwor & Kigathi, 2012). An organization that builds a learning culture leads to the development of a collaborative and innovative thinking system. Providing employees with the necessary training on TQM enables them to have a better understanding of the system (Fening et al., 2013).

Continuous improvement is a TQM principle that refers to constant improvement of processes, services and goods (Khan, 2010). According to Khan (2010), the foundation of continuous improvement is process improvement practices that achieve “incremental improvement and innovations in products, services and processes.” Various players in the telecommunications industry including Vodafone, Telenor and China Mobile, continuously strive to enhance customer services and their ability to satisfy customer needs especially in terms of customer privacy policies and procedures (Auwor & Kigathi, 2012; Khan, 2010).

Process improvement is a major part of any TQM strategy. Proper management of the manufacturing processes of any industry is important in avoiding any breakdowns that can affect the quality of services and products (Fening et al., 2013). To achieve process improvement, an organization should use various strategies such as change of process,

eliminating steps that add no value to both internal and external customers and use of statistical techniques (Khan, 2010).

## **2.4 Empirical Studies**

There are various studies that have been conducted across the world with the aim of finding the relationship between total quality management and the performance of organizations. These studies have been done in both service- and product-based organizations. Most of these studies seem to come to the similar conclusion that TQM practices positively impact organizational performance.

Khan (2010) performed an empirical study with the aim of investigating the application of the Deming model of TQM in the telecommunication industry in Pakistan. The study findings indicated that achieving strategic quality objectives requires the use of an integrated approach when implementing TQM practices.

The study conducted by Oriare (2011) sought to investigate the use of TQM in strategic management at Safaricom Limited in Kenya. The results of the study show that TQM is an important tool in the Kenyan communication sector that when implemented yields increased productivity and provides a competitive advantage to a company.

A case study of MTN Nigeria Limited was carried out by Alamutu, Hotepo, Oyeobu & Nwatulegwu (2012) with the aim of evaluating the effect of TQM practices on business performance of the telecommunications sector in Nigeria. The findings of the study indicated that commitment of top management plays a crucial role in achieving employees' satisfaction. Additionally, continuous training in quality plays an essential role in customer satisfaction.



A case study of Airtel Kenya was carried out by Awuor & Kigathi (2012) in order to explore the use of TQM practices in telecommunications firms in Kenya. Particularly, the study sought to investigate the existence of a quality culture in Airtel Kenya as well as to identify the barriers that affect the implementation of TQM and to ascertain whether soft infrastructure has the ability to support the implementation of TQM. In addition, the adoption of a quality culture is quite essential in any organization since it significantly impacts organizational performance

Fening, Amaria & Frempong (2013) sought to investigate the relationship between total quality management and the survival of organizations in the manufacturing industry in Ghana. The study used the quantitative approach and survey method of collecting data. The findings showed a significant positive effect of TQM practices on organizational performance. In particular, TQM practices play a crucial role in the survival of firms in the Ghanaian manufacturing industry.

A study by Nekeoueizadeh & Esmaili (2013) sought to examine the impact of TQM on organizational performance of firms in the telecommunications industry in Iran. From the the study findings, it was evident that the implementation of TQM practices has significant positive impact on the quality performance (QP), innovation performance (IP) and organizational performance (OP) of the Iranian telecommunications industry.

Khanam, Talib & Siddiqui (2014) carried out a review of TQM and IT research in the ICT industry of India with the aim of providing comprehensive literature on the use of a combination of TQM and IT in the ICT sector. The results of the study indicated that TQM has been widely used in the Indian ICT sector. In addition, the study showed that

most studies on TQM were qualitative as opposed to quantitative. The greatest limitation of this study is that it relies on secondary sources of data and therefore does not provide empirical evidence on TQM and its application in the ICT sector.

Ngambi & Nkemkiafu (2015) carried out a study on the effect of TQM on organizational performance of manufacturing companies in the republic of Cameroon. The results of the study indicate that cost reduction is achieved through leadership commitment, inspection and quality control whereas financial performance and corporate social responsibility are achieved through training and employee empowerment.

## 2.5 Summary of Empirical Studies and Knowledge gaps

Author & Year	Subject of study	Findings	Gap
Khan (2010)	Use of the Deming model in the telecommunication industry in Pakistan	Achieving strategic quality objectives requires the use of an integrated approach to TQM implementation	-Bias due to reliance on individual opinion and non-customer respondents. -use of the Deming model on one industry
Oriare (2011)	Use of TQM practices in strategic planning at Safaricom limited	TQM yields competitive advantage	Researcher failed to seek the opinions of customers
Alamutu, Hotepo, Oyeobu & Nwatulegwu (2012)	Effect of TQM practices in the Nigerian telecommunication sector	-Top management commitment is crucial in TQM implementation. -continuous training is useful in customer satisfaction.	Generalization of results.
Awuor & Kigathi (2012)	Use of TQM practices at Airtel Kenya	TQM positively influences organizational culture	Focus on only one division of the studied company

Fening, Amaria & Frempong (2013)	Relationship between TQM and the survival of organizations in the Ghanaian manufacturing industry	There is a positive relationship between TQM practices and organizational performance	Generalization of results
Nekeoueizadeh & Esmaeili (2013)	Impact of TQM on organizational performance in the Iranian telecommunications industry	TQM positively affects quality and innovation performance that in turn affect organizational performance	Failure to assess the influence of environmental factors on TQM principles
Khanam, Talib & Siddiqui (2014)	Use of TQM in the ICT sector in India	TQM is widely used with IT research in the ICT sector	Over-reliance on secondary data sources
Ngambi & Nkemkiafu (2015)	Effect of TQM on organizational performance of Cameroonian manufacturing companies	There is no significant effect of TQM practices on customer satisfaction	Focus only on manufacturing industries

## 2.6 Conceptual Framework

Independent Variables  
TQM Practices

- Leadership
- Effective communication
- Customer focus
- Supplier relations
- Employee empowerment
- Training and education
- Continuous improvement
- Process improvement



Dependent Variables  
Organizational Performance

- Innovation performance
- Quality performance
- Financial performance

**Source: Researcher, (2016)**

It is hypothesized TQM Practices are positively correlated to organizational performance

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

The chapter presents the research design, study population, data collection and analysis that will be applied during the study.

### **3.2 Research Design**

The Research design adopted for this study is descriptive case study. A descriptive research design will enable the study to achieve the research objectives. Descriptive research will enable the researcher to gather quantitative data (Williams, 2011)

### **3.3 Population**

The population of the study is 5 mobile telephone operators in Kenya: Safaricom Limited, Airtel Networks Kenya Limited, Orange Telkom Kenya Limited (Orange), and Finserve Africa Limited (Equitel) and Sema Africa Limited as per the Communication Authority of Kenya. A census survey was done on all on all 5 mobile operators since the population is small

### **3.4 Data Collection**

The data was collected from respondents using closed ended questionnaires. The questionnaire consisted of 3 sections. (Section A: Demographic information, B: The impact of using TQM by mobile telecommunication firms and C: organization performance). Drop and pick later method was used to administer the questionnaire. Primary data was used in the study. The respondents were the 27 heads of departments of the 5 mobile operators in Kenya as per appendix II.

### 3.5 Data Analysis

The collected data was analyzed using descriptive statistics which involved measures of central tendency. To ensure efficient and effective data analysis, cross tabulation analysis which uses SPSS method was used to regroup and reduce the data to a small number of underlying common factors or domains that summarized the data to help in the interpretation through recoding of variables. To achieve the first objective which is to determine the impact of using TQM by the mobile telecommunication firms in Kenya, descriptive statistics was used. To address the second objective, i.e. to establish the relationship between the implementation of total quality management practices and organizational performance in the mobile telecommunication firms in Kenya, multiple regression analysis was done. The regression model below was used:-

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + e$$

Where;

$\beta_0$ = constant or intercept

Y= organizational Performance

X1= Leadership

X2= Effective communication

X3= Customer focus

X4= Supplier relations

X5= Employee empowerment

X6= Training and education

X7= Continuous improvement

X8= Process improvement

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_8, \beta_8$  are the coefficient of the variables.

$e$  is the error term

**Table 1: Match analysis method to Objectives**

<b>Objectives</b>	<b>Data Analysis</b>
Objective I	Descriptive analysis
Objective II	Regression analysis

**Source: Researcher, (2016)**

## **CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION**

### **4.1 Introduction**

This chapter presents the analysis of study findings on the relationship between total quality management practices and performance of mobile telecommunication firms in Kenya. This chapter analyses the variables involved in the study and estimates of the model presented in the previous chapter.

### **4.2 Data Presentation**

#### **4.2.1 Response Rate**

The study targeted 27 head of Department for the 5 mobile telephone operators in Kenya: Safaricom Limited, Airtel Networks Kenya Limited, Orange Telkom Kenya Limited (Orange), and Finserve Africa Limited (Equitel) and Sema Africa Limited as per the Communication Authority of Kenya. The objective was to determine extent of implementation of total quality management practices and relationship between the total quality management practices and organizational performance in the mobile telecommunication firms in Kenya. Out of the 5 firms, 3 firms (Safaricom, Airtel and Equitel) agreed to respond to questionnaires while 2 firms (Telkom Kenya and Sema Mobile) declined to respond. 3 firm's responded (17 respondents) represents 62.96%. and out of 17 issued questionnaires, 16 questionnaires representing 94.1% of the total questionnaires distributed were returned fully completed. It can be inferred that the response rate was good. According to Mugenda and Mugenda (2003) a response rate of 70% and over is excellent for analysis and reporting on the opinion of the entire population.

#### 4.2.2 Respondent Gender

Table 4.1 below indicates majority of the department heads are Male (75%) and Female (25%) who filled the questionnaires.

**Table 4.1: Respondent Gender**

<b>Respondent Gender</b>	<b>F</b>	<b>%</b>
Male	12	75
Female	4	25
<b>Totals</b>	<b>16</b>	<b>100</b>

**Source: Research Data, (2016)**

#### 4.2.3 Highest Level of Education

Table 4.2 below indicates (37.5%) respondents who participated in the study were undergraduates, 56.25% indicated they were postgraduates, 6.25% is PhD and none had Diploma or others. This shows that majority of the respondents were postgraduates

**Table 4.2: Level of Education**

<b>Education Level</b>	<b>F</b>	<b>%</b>
Diploma	0	0
Bachelor Degree	6	37.5
Master Degree	9	56.25
PhD	1	6.25
Other	0	0
<b>Totals</b>	<b>16</b>	<b>100</b>

**Source: Research Data, (2016)**



#### 4.2.4 Respondent Work Experience

Results of the study indicate that 37.5% of the respondents had worked between 0-5 years 56.25%, and 6.25% of the respondents had worked for a period between 5-10, and 10-15 years respectively, while 0% of the respondents had a work experience of over 15 years as indicated on table 4.3

**Table 4.3: Work Experience**

<b>Education Level</b>	<b>F</b>	<b>%</b>
0-5 Years	6	37.5
5-10 Years	9	56.25
10-15 Years	1	6.25
15 + Years	0	0
<b>Totals</b>	<b>16</b>	<b>100</b>

**Source: Research Data, (2016)**

#### 4.2.5 Firms Years of service

Results of the study indicate that 6.25% of the firms have been in existence for 0-5 years 12.5%, and 37.25% of the firms have been in existence for a period between 5-10, and 10-15 years respectively, while 43.75% of the firms have been in existence for a period over 15 years as indicated on table 4.4

**Table 4.4: Firms Years of service**

<b>Year of Service</b>	<b>F</b>	<b>%</b>
0-5 Years	1	6.25
5-10 Years	2	12.5
10-15 Years	6	37.5
15 + Years	7	43.75
<b>Totals</b>	<b>16</b>	<b>100</b>

**Source: Research Data, (2016)**

#### **4.2.6 Total Quality Management Implementation**

Table 4.5 indicates that 87.5% of the Mobile telecommunication firms in Kenya have implemented total quality management while 12.5% of them have not implemented

**Table 4.5: Total Quality Management Implementation**

<b>Measurement</b>	<b>F</b>	<b>%</b>
Yes	14	87.5
No	2	12.5
<b>Totals</b>	<b>16</b>	<b>100</b>

**Source: Research Data, (2016)**

#### **4.3 Extent of implementing TQM Practices**

##### **4.3.1 Implementation of Total Quality Management Practices**

Table 4.6 indicates that 81.25% of the Mobile telecommunication firms in Kenya have implemented total quality management practices while 18.75% of them have not implemented

**Table 4.6: Implementation of Total Quality Management Practices**

<b>Measurement</b>	<b>F</b>	<b>%</b>
Yes	13	81.25
No	3	18.75
<b>Totals</b>	<b>16</b>	<b>100</b>

**Source: Research Data, (2016)**

#### **4.3.2 Extent of implementing Total Quality Management Practices**

Table 4.7 indicates that 62.5% of the Mobile telecommunication firms in Kenya have fully implemented total quality management practices while 18.75% of them have either implemented partially or none.

**Table 4.7: Extent of implementing Total Quality Management Practices**

<b>Measurement</b>	<b>F</b>	<b>%</b>
Fully	10	62.5
Partial	3	18.75
None	3	18.75
<b>Totals</b>	<b>16</b>	<b>100</b>

**Source: Research Data, (2016)**

#### **4.4 Relationship between Total Quality Management Practices and Organizational Performance in Mobile telecommunication firms in Kenya**

The study sought to find the relationship between the total quality management practices and organizational performance in the mobile telecommunication firms in

Kenya. All the respondents indicated that the all the TQM practices applied the firms have led to improve the overall organization performance of the firms.

#### **4.4.1 Regression Analysis**

Apart from the descriptive statistics carried out as outlined in the previous sections, the researcher also performed a regression analysis on the data to determine the relationship between the total quality management practices and organizational performance in the mobile telecommunication firms in Kenya while holding the correlation coefficient (r) value at between plus and minus one (-1.00 and +1.0). The study used the significance level of  $\alpha = .05$  (95%), Degrees of freedom (df) of 8, and two-tailed test. The regression analysis results is presented using regression model summary tables, analysis of variance (ANOVA) table and beta coefficient tables

#### **4.4.2 Model Summary**

The researcher conducted a regression analysis to determine the significance relationship of leadership, communication, customer focus, supplier's relations, employee empowerment, training and education, continuous improvement and process improvement against the organizational performance. Table 4.8 show that the coefficient of determination is 0.946; therefore, about 94.6% of the variation in the organizational performance is explained by leadership, communication, customer focus, supplier's relations, employee empowerment, training and education, continuous improvement and process improvement. The regression equation appears to be very useful for making predictions since the value of  $R^2$  is close to 1.

**Table 4.8: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.973 <sup>a</sup>	.946	.884	.27479

**Source: Research Data, (2016)**

- a. Predictors: (Constant), Process improvement, Customer Focus, Supplier relations, Leadership, Training and education, Employee empowerment, Communication, Continuous improvement
- b. Dependent Variable: Organizational Performance

#### 4.4.3 Analysis of Variance

Table 4.9 below presents the results of the Analysis of Variance (ANOVA) on the leadership, communication, customer focus, supplier relations, employee empowerment, training and education, continuous improvement and process improvement versus the organizational performance. The results below show a Sig value of 0.001 which is lower than 0.05 meaning that there is a statistically significance relationship between implementation of TQM practices and organizational performance in the mobile telecommunication firms in Kenya.

**TABLE 4.9: ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.247	8	1.156	15.307	.001 <sup>b</sup>
	Residual	.529	7	.076		
	Total	9.776	15			

**Source: Research Data, (2016)**

- a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), Process improvement, Customer Focus, Supplier relations, Leadership, Training and education, Employee empowerment, Communication, Continuous improvement

#### 4.4.4 Coefficients

The study further determined the beta coefficients of TQM Practices verses the organizational performance. Table 4.10 thus shows the coefficients of individual variables obtained by this analysis and also indicates whether individual variables have a significant relationship to the dependent variable (organizational performance). This demonstrates that the most TQM practices have positively influenced organizational performance in the mobile telecommunication firms in Kenya.

**Table 4.10: Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.425	1.197		.355	.733
Leadership	-.516	.249	-.470	-2.076	.076
Communication	.305	.201	.292	1.521	.172
Customer Focus	.319	.283	.129	1.128	.296
Supplier relations	-.314	.150	-.235	-2.098	.074
Employee empowerment	.158	.173	.146	.914	.391
Training and education	-.786	.177	-.921	-4.426	.003
Continuous improvement	.954	.302	.964	3.157	.016
Process improvement	.790	.256	.733	3.089	.018

**Source: Research Data, (2016)**

a. Dependent Variable: Organizational Performance

Using the values of the coefficients ( $\beta$ ) from the regression coefficient table 4.10, the established regression equation takes the form of:

$$\text{Organizational performance (Y)} = .425 - 0.516X_1 + 0.305X_2 + 0.319X_3 - 0.314X_4 + 0.158X_5 - 0.786X_6 + 0.954X_7 + 0.790X_8$$

Therefore Table 4.10 above shows that customer focus, communication, employee empowerment, continuous improvement and process improvement practices have positive coefficients, implying that these independent variables positively predict organizational performance of mobile telecommunication firms in Kenya. Therefore taking all independent variables constant at zero (0); organizational performance of mobile telecommunication firms in Kenya will be at 0.425. The results of the study further indicates that p-value of = (0.003) for training and education, (0.016) for continuous improvement, and (.018) for process improvement are smaller than the significance level of 0.05 this results shows that there is a significant relationship between training and education, continuous improvement, process improvement and organizational performance of mobile telecommunication firm in Kenya.

The results also shows that any unit increase in communication, customer focus, employee empowerment, continuous improvement and process improvement by 0.305, 0.319, 0.158, 0.954 and 0.790 respectively to change in organizational performance while a decrease in leadership, supplier relationship and training and education by 0.516, 0.314 and 0.786 respectively to change in organizational performance.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter presents the summary, conclusions, recommendations, and suggestions for further research.

### **5.2 Summary**

The study established that leadership practices affect the organizational performance of mobile telecommunication firms in Kenya. The implementation of total quality management has facilitated mobile firms leadership to provide the necessary resources to meet the new requirements resulting from quality management systems, provided conducive working environment to employee involvement in quality management process, influenced the decision of selecting qualified suppliers and certifying suppliers for quality material, creates strategies, plans and systems for achieving superior quality in the institution and that has inspired staff and management in effective and efficient use of the resources and efforts of the institution towards quality excellence.

The study established that an effective communication practice has led the organizational performance of mobile telecommunication firms in Kenya. The implementation of total quality management has facilitated mobile firms with effective communication systems which have free flow of quality management information between departments, from management to employees, from employees to employees and communication feedback between departments, management and employees.

The study established that customer focus practice has led the organizational performance of mobile telecommunication firms in Kenya. The implementation of total quality management has facilitated mobile firms to focus on the customers' needs



and their expectation, and satisfaction through offering quality and innovative products.

The study established that supplier's relationship practice has led the organizational performance of mobile telecommunication firms in Kenya. The implementation of total quality management benefits both mobile firm supplier and customer through long term commitments of both parties. The mobile firms promote and facilitate communication with key suppliers with the aim of improving their effectiveness and efficiency of provision of the required supplies. The mobile firms frequently shares with suppliers information such as their needs and expectations and that the mobile firms promotes supplier quality cooperation resulting in organizational performance

The study established that employee's empowerment practice has led the organizational performance of mobile telecommunication firms in Kenya. The implementation of total quality management mobile firm employee's empowerment has been effectively managed by the top management. The firms spends a large amount of its annual budget on employees training and development on total quality management systems, whereby the system programme promotes the freedom of employees to use their initiative in matters of customer delivery. Mobile firms has promoted the establishment of an environment that encourages employee efforts toward attainment of institutional objectives and encouraged them have the responsibility and authority to make decisions that affect them and their work teams

The study established that training and education practice has led the organizational performance of mobile telecommunication firms in Kenya. The implementation of total quality management mobile firm training and education programmes establishes

the needs of training the junior staff, developing the junior officer's careers and on how to execute their duties. The programmes also help the junior officers experience self-improvement at the work place which ends up improving the performance of the firms.

The study established that continuous improvement practice has led the organizational performance of mobile telecommunication firms in Kenya. The implementation of total quality management mobile firm continuous improvement has led to improved service delivery to the customers and employees welfare. This results to improved organizational performance of the firms since all the parties are satisfied with services.

The study established that process improvement practice has led the organizational performance of mobile telecommunication firms in Kenya. The implementation of total quality management mobile firm process improvement have resulted to increased customer satisfaction with firms products. Have has resulted to improved employees involvement in achieving the organization goals.

The study established that the implementation of TQM has led to increased mobile firms profitability, sales turnover, competitive markets hence need to acquire or retain the bigger market share. Study also found that there is improved service delivery to all customers and suppliers, reduced cost and waste management. Also firms are focusing on increased retention as a result of customer satisfaction.

### **5.3 Conclusion**

The implementation of quality management systems has increased mobile telecommunication firm profitability, enhanced sales, increased competition and resulted in acquisition of new market share, enhanced service delivery in the mobile

firms, ensured effective waste reduction in operations, improved operation efficiency thus reducing operation costs and increased customer retention as a result of customer satisfaction. The study result shows that the continual improvement enhances improved service delivery to the customers and employees welfare since all the parties are satisfied with services

The implementation of total quality management mobile firm employee's empowerment has been effectively managed by the top management. The firms spends a large amount of its annual budget on employees training and development on total quality management systems, whereby the system programme promotes the freedom of employees to use their initiative in matters of customer delivery. Mobile firms has promoted the establishment of an environment that encourages employee efforts toward attainment of institutional objectives and encouraged them have the responsibility and authority to make decisions that affect them and their work teams

The customer focus has affected the performance of the organization by increasing revenue and market share, effectiveness in use of resources, improved customer loyalty and ensuring that the customer needs expectations are communicated. The findings also found that the leadership has affected the performance of the organization through motivation of employees, evaluation of activities, providing clear vision and creation of provision of shared values, fairness and ethical role model.

The implementation of total quality management bank has entered into strategic partnership with suppliers so as to ensure continued performance of the mobile firm processes uninterrupted. They promote and facilitate communication with key suppliers the aim of aim of improving their effectiveness and efficiency of provision of

the required supplies. They also frequently share with supplier's information such as their needs and expectations and promote supplier quality cooperation resulting in organizational performance.

#### **5.4 Recommendation**

There is need for the mobile telecommunication firm management to implement organizational culture change in the organization which makes it to implement total quality management. There is also need to emphasize on continuous improvement, and open communication throughout the organization. In addition, there is need to ensure top management commitment who will relay the message that, total quality management implementation will result to high performance in the organization.

There is need for the mobile firms to prioritize and enhance total quality management training process to help in preparing employees towards managing the total quality management practices, so as to be able to identify and contribute to ongoing quality improvement process of operational efficiency. There is need for mobile firm management to set clear, measurable and achievable objectives so that they will set the right direction for the firm.

In addition they need to effectively allocate adequate required resources and capabilities so as to attain those objectives and subsequently improve operational efficiency and profitability. There is need for mobile firm management to establish growth and treat their suppliers as long term partners as they are integral part of the organizations business operations and materials and purchased parts are often a major source of quality problems. This will promote and facilitate communication and thereby improving the effectiveness and efficiency of processes that create value.

## **5.5 Limitation**

The study used closed ended questionnaires that rely on self- report responses, however the problem with using a questionnaire is that it is based on the assumption that participants would respond to the questions in an honest and accurate manner. Nevertheless, it is not always the case that participants answer in an honest manner. This is because participants often give answers that they believe to be desirable.

The study was carried out in the five mobile telecommunication firms in Kenya as reported by CAK. However, only three firms responded (Safaricom, Airtel Kenya and Equitel) the other two firms declined to respond reason being Telkom Kenya is under new transition after it was purchased by Helios Investment partners and Sema mobile declined based on ground that the firm is very small in the market and they don't want publicity.

## **5.5 Suggestions for Further Studies**

This study examined the specific TQM practices and organizational performance of mobile telecommunication firms in Kenya. However there are other TQM practices which likewise contribute to organizational performance of mobile telecommunication firms hence similar studies should be done in future to determine the effects of the TQM practices to performance.

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## APPENDIX

### APPENDIX I: RESEARCH QUESTIONNAIRE

#### Introduction

This questionnaire has 3 Section. Section A: Demographic Information, Section B: The extent of implementing TQM practices by the mobile telecommunication firms and Section C: Organizational performance.

#### Section A: Demographic Information

1. Indicate your gender (Mark  $\surd$ )

Male ( )

Female ( )

2. Please indicate the highest level of education attained (Mark  $\surd$ )

Diploma ( )

Bachelor Degree ( )

Master Degree ( )

PhD ( )

If not the above ( )

3. How long have you worked for the mobile telephone operators in Kenya?

(Mark  $\surd$ )

Below 5 Years ( ) 5 – 10 Years ( ) 10 – 15 Years ( ) Above 15 Years ( )

4. How long has this Company been in existence? (Mark  $\surd$ )

Below 5 Years ( ) 5 – 10 Years ( ) 10 – 15 Years ( ) Above 15 Years ( )

5. Has the company implemented total quality management? (Mark  $\surd$ )

Yes ( ) No ( )

**Section B: The extent of implementing TQM Practices by the mobile telecommunication firms in Kenya**

6. Has your firm implemented total quality management practice? (Mark √)

Yes ( ) No ( )

If yes, to what extent? (Mark √)

Fully ( )

Partially ( )

None of the above ( )

7. Using a scale of 1-5, where 5= strongly agree; 4=Agree; 3=Neutral; 2= Disagree; 1=strongly Disagree; Please indicate the extent to which you agree with the following statements? (Mark √)

Statements	1	2	3	4	5
<b>Leadership</b>					
The company leadership has provided the necessary resources to meet the new requirements resulting from quality management systems implementation					
The company leadership has provided conducive working environment to employee involvement in quality management process					
The company leadership plays an active role in creating strategies, plans and systems for achieving superior quality in the institution					
The company leadership has inspired staff and management in effective and efficient use of the resources and efforts of the institution towards quality excellence					
<b>communication</b>					
There are well developed Communication system in your					

organization					
There is free flow of quality management information between departments in yours organization					
There is free flow of quality management information from management to employees in your organization					
There is free flow of quality management information between employees in your organization					
There is a well-developed feedback mechanism in your organization					
<b>Customer focus</b>					
One of the most important factors for the success of an company is its customers.					
The result of one activity (the process) directly affects the other entity (the customer)					
Customers satisfaction improves the cash flow of an organisation					
<b>Supplier relations</b>					
Implementation of TQM benefits both supplier and customer					
Long-term commitment to TQM benefits both supplier and customer					
Long-term relationship between purchasers and suppliers is necessary for best economy.					
<b>Employee empowerment</b>					
As part of implementation of quality management in the company employees quality of life is effectively managed by the company top management					
The company spends a large amount of its annual budget on employees training and development on total quality management systems					
Quality management systems programme promotes the freedom					

of employees to use their initiative in matters of customer delivery.					
The company management has promoted the establishment of an environment that encourages employee efforts toward attainment of institutional objectives					
Employees at all levels have the responsibility and authority to make decisions that affect them and their work teams					
<b>Training and education</b>					
A training needs assessment has been conducted for junior ranked officers					
Junior ranked officers experience career development at their work place					
Junior officers are adequately trained on how to execute their tasks					
Junior officers experience self-improvement at the work place					
<b>Continuous improvement</b>					
Since implementation of quality management in the company there has been continues improvement.					
The companies' service to the customers has continually improved.					
The welfare of the employees has improved.					
<b>Process improvement</b>					
The implementation of the total quality management has been improved					
A well implemented TQM in organization increases customer satisfaction					
The success of TQM results to improved employees involvement.					

**Section C: Organizational performance**

8. Using a scale of 1-5, where 5= strongly agree; 4=Agree; 3=Neutral; 2= Disagree; 1=strongly Disagree; Please indicate the extent to which you agree with the following statements?

<b>Performance Organization</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Implementation of quality management systems has increased company profitability.					
Quality management systems have enhanced sales which have contributed to company performance.					
Effective implementation of quality management systems has increased company competitiveness and resulted in acquisition of bigger market share.					
Quality management systems have enhanced service delivery in the company.					
Implementation of quality management systems has ensured effective waste reduction in operations.					
Quality management systems improve operation efficiency thus reducing operation costs					
Implementation of quality management systems focuses on increased retention as a result of customer satisfaction					

**THANK YOU FOR YOUR TIME AND COOPERATION**

**APPENDIX II: TABLE 27 HEAD OF DEPARTMENTS**

<b>Safaricom</b>	<b>Airtel</b>	<b>Telkom Kenya</b>	<b>Finserve</b>	<b>Sema</b>
Supply Chain	Supply Chain	Supply Chain	Supply Chain	Supply Chain
Customer Care	Customer Care	Customer Care	Customer Care	Customer Care
Finance	Finance	Finance	Finance	Finance
Human Resources	Human Resources	Human Resources	Human Resources	Human Resources
Marketing (CBO)	Marketing	Marketing	Marketing	Marketing
Strategy & Innovation	Network			

**Source: Researcher, (2016)**