STRATEGIC QUALITY MANAGEMENT INITIATIVES AND PERFORMANCE OF MOBILE COMMUNICATIONS SERVICE PROVIDERS IN KENYA

BY

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DECLARATION

This research project is my 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 examination with my approval as the University supervisor.

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All glory to God for life, good health, protection, wisdom, love, guidance and the gift of family.

DEDICATION

To who I live for:

Racey, Wesley and Wayne.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Survival for companies in the corporate world is depended on many factors. Some of these factors can be categorized as internal to the companies others are external to the companies. The internal factors may constitute the strengths and weaknesses of the organizations while the external may constitute the opportunities and threats to the organizations. This is normally abbreviated as SWOT. SWOT analysis is used by firms to identify their strength, weakness, opportunity and threats.

Strategic quality management is one of the management concerns in the modern corporate world that can have a great impact to an organization whether it the organization adopts it or not. Organizations need to evaluate adoption strategic quality management since this is one way of improving on their strength and reducing their weaknesses. Strategic quality management if successfully adopted can greatly improve the performance of a firm.

This is study is about strategic quality management initiatives and organizational performance in mobile communications service providers in Kenya. Mobile telephony has been around for the last less than twenty years. In Kenya, mobile telephony was introduced in the year 2000. The industry has witnessed phenomenal growth since the introduction of mobile telephones. The phenomenal growth has come with it unprecedented challenges of ensuring continuous provision of quality services to the large and growing number of mobile telephone subscribers.

Constant change in technology also presents a challenge to the mobile operators to keep up with the latest technologies in order to provide excellent service to end users. This is besides the competitive environment in which mobile operators play in. This study will therefore investigate and determine the strategic quality initiatives that mobile operators have adopted and establish how these initiatives affect the organizational performance of mobile communications services providers in Kenya. The organization performance will focus on financial performance, innovation performance and operational performance.

The study will make use of structured questionnaire to collect data from management teams who work with the registered mobile operators in Kenya.

CHAPTER ONE

INTRODUCTION

1.1. Background

Operations management theory and practice have for many years focused on individual differences in the management of performance in organizations. Indeed, researchers in areas such as selection, performance appraisal, and compensation have been concerned mainly with decision making based on the assessment of individual differences. An underlying assumption has been that individuals matter in determining the variation in work performance (Waldman, 1994). Proponents of total quality management (TQM) have not disputed this assumption. However, they have questioned the predominant focus on individuals and, instead, have chosen to emphasize aspects of work systems as being relevant to work performance, Deming (1986) and (1993), Juran (1989), Walton (1986).

Waldman (1994) provided a system-focused model of work performance which endeavored to show the connections between aspects of systems and the work performance of individuals within those systems. Companies have been concerned with the quality of their products and their quality-management processes for years. However, only since the mid-1980s have organizations paid serious attention to the implementation of TQM, Waldam (1994). SQM has its origins in manufacturing, where statistical quality-control measures were first used to reduce product defects. However, SQM has spread to include applications in service industries and government, Brown (1991), Cohen and Brand (1993).

SQM has evolved as an approach to quality that it is now characterized in terms of an integrated, systematic, organization wide strategy for improving product and service quality, Dean and Evans (1994), Tenner and DeToro (1986). SQM is neither a program nor a specific tool or technique. Rather, SQM may be viewed as a shift in both thinking and organizational culture, Sashkin and Kiser, (1993). Many corporations view their performance management systems as organizational wallpaper meaning that they exist only in the background and are not expected to add value (Markus, 2004), yet surveys of businesses internationally clearly show that such programs, if well designed and implemented, have positive impacts on individual productivity and financial results.

1.1.1. Strategic Quality Management Initiatives

Quality can be defined as "the degree, to which a set of inherent characteristics fulfills the requirements, needs or expectations that are stated, generally implied or obligatory" (ISO 9000:2000). Quality management is hinged on the definitions of total quality management (TQM) which is a philosophy that embodies a set of quality management practices that are geared to improve performance in organizations. TQM can be defined as "an approach to improving the effectiveness and flexibility of business as a whole", (Oakland, 1989). Quality management (QM) hence presents a strategic option and an integrated management philosophy for organizations, which allows them to reach their objectives effectively and efficiently, and to achieve sustainable competitive advantage (Goldberg & Cole, 2002).

Some of the strategic quality management initiatives undertaken by both manufacturing and services firms include, total quality management (TQM), continuous quality improvement (CQI), six-sigma, just-in-time (JIT), supply chain Management (SCM)

approaches (Talib, Rahman, & Qureshi, 2010), benchmarking (Sajjad & Amjad, 2012), monitoring, quality training, top management commitment and involvement, employee involvement, customer focus, concurrent engineering initiatives (Belay, Helo, Takala, & Kasie, 2011), and quality awards.

1.1.2. Organizational Performance

Organizational performance is defined as behavior associated with the accomplishment of expected, specified, or formal role requirements on the part of individual organizational members (Campbell, 1990). Thus, organizational performance includes in-role behavior that can be contingently tied to rewards. Organizational performance is the extent to which an organizations achieves a set of pre-defined targets that are unique to its mission. These targets will include both *objective* (numerical) and *subjective* (judgmental) indicators (Albrecht, 2011).

Albrecht (2011) identifies seven key performance drivers which are actually dimensions of organizational performance. These are also called domains of excellence and they include; strategic focus, customer value, leadership and team performance, culture, values and ethics, process excellence, talent management and knowledge management.

Nekoueizadeh and Esmaeili (2013) identified some of performance measures to include total quality management (TQM), quality performance (QP), innovation performance (IP) and organizational performance (OP). Each of which has its own specific performance indicators. This study will consider quality performance, innovation performance and organizational performance.

Many researchers have concluded that adoption and implementation of strategic quality management positively influence the performance of an organization. If adequately deployed, the principle brings about added value to an organization in terms of efficiency in operation, employee satisfaction, customer satisfaction, and even profitability (Oluseun & Oluwatoyin, 2008).

1.1.3. Mobile Communications Service Providers

The history of mobile telephony is not clear. From available records there is one patent in the U.S.A - Patent Number 887357 for a wireless telephone issued in 1908 to Nathan B. Stubblefield of Murray, Kentucky. He applied this to "cave radio" telephones and not directly to cellular telephony as we know it today (Waburi, 2009).

Mobile communications service providers (MCSP) represent telecommunications operators who provide telephone voice services, data services, mobile money transfers services and other value added services (VAS), wirelessly. MCSP can be private or public firms. MCSP run on various technologies and standards such as global system for mobile communications (GSM or 2G), universal mobile telecommunications system (UMTS), code division multiplexing access (CDMA), wideband code division multiplexing access (WCDMA) also known as 3G and long term evolution (LTE) also known as 4G. 2G is mainly used for voice services provision and 3G and 4G are used for providing high-speed data services wirelessly. The mobile communications service providers in Kenya are Safaricom, Airtel and Orange Kenya (Telkom Kenya). Recently, in early 2015 a fourth operator called Equitel was licensed under the mobile virtual network operator (MVNO) scheme.

Mobile virtual network operator normally use infrastructure of the existing operator to provide services to customer. Equitel has entered into an agreement with Airtel to use its infrastructure to provide mobile communication services. MCSP face myriad challenges in provision of 2G, 3G and 3G services. The main challenges that affect MCSPs operations include spectrum or frequency availability, provision of quality services, demand for high speed connectivity by customers, competitive environment requiring constant innovation; sustainable revenue and profitable business growth (Reed & Tripathi, 2014).

1.2. Problem Statement

The mobile service provider's network is never static. The network needs to be upgraded from one revision to another revision of a given generation technology and from one generation to another generation. Furthermore, once the network is upgraded with new features and capabilities, troubleshooting and then on-going optimization are carried out (Reed & Tripathi, 2014). The achievable peak performance keeps changing as the network undergoes never-ending upgrades. Even though LTE provides superior performance compared to prior generations of mobile wireless networks, LTE networks are currently undergoing upgrades with new features such as carrier aggregation and Voice over LTE (VoLTE), with each upgrade requiring changes to network management. Often customers encounter challenges of dropped calls, slow internet access, poor signal coverage amongst others. These challenges determine the level of quality for services provided by the MCSP which in the end affect their business performance and profitability (Reed & Tripathi, 2014). Strategic quality management has a direct impact on organizational performance including that of mobile communications service providers (MCSP) which have become key contributors and

enablers of economic growth in both developed and developing countries Baidoun (2003).

A number of studies have been done on the impact of strategic quality management to the organizational performance in many organizations in manufacturing and services sectors, globally and locally. However a limited number of studies are available for review that have primarily focused on mobile communications service providers (MCSP) organizations. Muturi et al (2013) did a survey on quality management practices but this was more focused on small and medium manufacturing industries in Kenya with little mention of how SQM initiatives have been done in MCSP. Magutu et al (2010), also presented a study paper on the quality management practices in Kenya in which they focused on educational institutions in Kenya using University of Nairobi as case study which did not capture SQM initiatives in MCSP, however the SQM concepts captured in this study could be relevant to this study.

Khan (2009) made the most relevant attempt to link quality management and performance of mobile telecommunications operators (MCSP) however his research is focused on mobile operators or MCSP in Pakistan, which has different dynamics and more developed than in Kenya. Another research carried out in the telecoms sector in Iran by Nekoueizadeh and Esmaeili (2013) concluded that total quality management aspects affect the quality performance, innovation and organizational performance; however this research was done in Iran which is a more developed country and with different demographics in comparison to Kenya.

This study will therefore be endeavoring to find out the SQM initiatives that are implemented by MCSP at the same time provide the link between the strategic quality management initiatives and organizational performance in mobile communications service providers in Kenya.

1.3. Objectives of the Study

The main objective of the study is to assess the extent to which the initiatives or fundamentals of strategic quality management (SQM) are being practiced by mobile communications services providers (MCSP) in Kenya. The specific objectives of this study are;

i. To determine the strategic quality management initiatives undertaken by mobile communications service providers (MCSP) in Kenya.
ii. To establish the relationship between strategic quality management initiatives and organizational performance in MCSP in Kenya.

1.4. Value of the Study

Strategic quality management initiatives have been introduced and practiced in some organizations in Kenya. However, there exists no clear evidence that these initiatives have been implemented in mobile communications service providers. The study is undertaken to address the lack of empirical findings concerning application of strategic quality management initiatives within mobile telecommunications industry in Kenya in the context of phenomenal development in the industry. Much of the work on quality management in Kenya has been focused on the manufacturing industries. Hence the value of this study to the body of knowledge shall be to; provide and present evidence of SQM initiatives application by MCSP in Kenya. The study will also generate

information that can be useful for MCSP leadership in evaluating SQM practices in their own organizations, identify weaknesses and initiate appropriate measures to enhance organizational performance.

Additionally, MCSP will be able to use the outcome of this study to enhance on their competitive advantages as they will be able to identify SQM initiatives that can improve the performance of their organizations. This study will also have an overall benefit to MCSP customers who will be able to enjoy better quality services once the findings of the study are executed by MCSP. The study can be used by researchers in the SQM field as information to facilitate further research work in this field. This study will provide the telecommunications industry regulators, for example, the Communications Authority of Kenya, and the government in general a framework for policy formulation and enhancement in order to ensure MCSP provide quality products and services to consumers sustainably and profitably.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Several theories exist on the topic of quality management. Deming (1986) offered fourteen (14) key principles for management to follow for significantly improving the effectiveness of a business or organization. Some of the principles include; creation of constancy of purpose toward improvement of product and service, with the aim to become competitive and to stay in business, and to provide jobs; adoption of the new philosophy with a requirement to take on leadership for change; cease dependence on inspection to achieve quality; ending the practice of awarding business on the basis of price tag and instead, minimize total cost, move toward a single supplier for any one item, on a long-term relationship of loyalty and trust.

Other prinicples include; constant improvement and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs; instituting training on the job and leadership; driving out fear, so that everyone may work effectively for the company; breaking down barriers between departments; eliminating slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity. Such exhortations only create adversarial relationships, as the bulk of the causes of low quality and low productivity belong to the system and thus lie beyond the power of the work force, eliminate work standards (quotas) on the factory floor. Substitute leadership, eliminate management by objective and management by numbers, numerical goals while substituting leadership.Deming (1986) completes the fourteen principles with the a call to remove barriers that rob the hourly worker of his right to pride of workmanship and that the responsibility of supervisors

must be changed from sheer numbers to quality; removing barriers that rob people in management and in engineering of their right to pride of workmanship. This means, inter alia, abolishment of the annual or merit rating and of management by objective; instituting a vigorous program of education and self-improvement and finally put everybody in the company to work to accomplish the transformation as transformation is everybody's responsibility in the organisation.

Shewhart (1931) identified two categories of variation which he called “assignable-cause” and “chance-cause” variation. Others call the two categories “special-cause” and “common-cause” variation, respectively. He devised the control chart as a tool for distinguishing between the two. The control charts included mean, range, np, p, c, and u charts. Shewhart (1931) reported that bringing a process into a state of statistical control—where there is only chance-cause (common-cause) variation—and keeping it in control was needed to reduce waste and improve quality. Shewhart cycle or Shewhart learning and improvement cycle combines management thinking with statistical analysis.

The constant evaluation of management policy and procedures leads to continuous improvement. This cycle has also been called the Deming cycle, the Plan–Do–Check–Act (PDCA) cycle, or the Plan–Do–Study–Act (PDSA) cycle. While Deming marketed the cycle to the masses—a cycle which he called the Shewhart cycle—most people referred to it as the Deming cycle. The Shewhart cycle has the following four stages; plan - identify what can be improved and what change is needed; do - implement the design change; study - measure and analyze the process or outcome; act - if the results

are not as hoped for, Shewhart (1986).This cycle is used to make changes that lead to improvement in a manner of continuous quality improvement. This is a never ending process. After the easy low cost changes are made (the low hanging fruit harvested), the cycle process is repeated for another step, task, or process in the microsystem or system. After a period of time, other changes may result in the original process having an opportunity for improvement again, Shewhart (1986).

2.2 Strategic Quality Management Initiatives

Strategic quality management (SQM) initiatives are those that are adopted by organizations in their effort to improve on their organizational performance in today's global and competitive market environment. There are several SQM initiatives that both manufacturing and services firms adopt in order to achieve competitive advantage. These include but not limited to total quality management (TQM), continuous quality improvement (CQI), six-sigma, just-in-time (JIT), supply chain management (SCM) approaches, Talib, Rahman and Qureshi (2010) benchmarking, Sajjad and Amjad (2012), monitoring, quality training, top management commitment and involvement, employee involvement, customer focus, concurrent engineering initiatives, Belay, Helo, Takala and Kasie (2011), customer focus, leadership, continuous improvement, strategic quality planning, design quality, speed and prevention, people participation and partnership, and fact-based management, Tummala and Tang (1994) and quality awards. Some of these initiatives are examined individually in the following sub-sections of the literature review.

2.2.1 Total Quality Management (TQM)

Total quality management (TQM) has been widely considered as the strategic, tactical and operational tool in the quality management research field (Talib, Rahman, & Qureshi, 2010). TQM is based on the premise that the quality of products and services and quality of the processes used to manufacture the products and deliver the services is the responsibility of everyone involved with the creation or consumption of the products or services which are offered by an organization, requiring the involvement of management, workforce, suppliers, and customers, to meet or exceed customer expectations (Nekoueizadeh & Esmaeili, 2013).TQM theoretical framework encompasses seven constructs namely, visionary leadership, internal and external co-operation, organizational system, learning, process management, continuous improvement, process outcomes, employee fulfillment and customer satisfaction based on Deming management model (Khan, 2009).

2.2.2 Continuous Quality Improvement (CQI)

CQI is a philosophy that encourages all for example, health care team members to continuously ask: “How are we doing?” and “Can we do it better?” (Edwards, Huang, Metcalfe , & Sainfort, 2008). More specifically, can we do it more efficiently? Can we be more effective? Can we do it faster? Can we do it in a more timely way? Continuous improvement begins with the culture of improvement for tasks, activities and projects which in turn impact on organization processes improvement (National Learning Consortium, 2013). CQI employs several strategies among them Lean; which involves elimination of wastage in production processes and six-sigma; which is more concerned with improving efficiency by identifying and removing causes of defects or errors and minimizing variability in manufacturing and business processes (Bantilan, 2012).

2.2.3 Supply Chain Management (SCM) Initiatives and Six-sigma

According to Zakuan et al (2010), effective supplier quality management can be achieved by cooperation and long term relationship with the suppliers. This argument is also supported by Zineldin and Fonsson (2000), who found that developing supplier partnership and long-term relationships can increase the organization competitiveness and thus, improve performance. Six-sigma is a business management and QI strategy that originated in the U.S. manufacturing industry; it seeks to improve efficiency by identifying and removing the causes of defects (errors) and minimizing variability in manufacturing and business processes (Bantilan, 2012). It combines statistical analysis with quality management methods. Six-Sigma also creates a special infrastructure of people within the organization [Green Belts (beginner) to Black Belts (most advanced)] who are experts in these methods. It follows a five step process of defining an opportunity in the manufacturing or services process that needs improvement, followed by measuring performance of the refined process, analyzing and improving the performance and finally controlling the process to ensure the improvement is sustained or developed further.

2.2.4 Visionary Leadership (VL) and Benchmarking (BM)

Previous research in SQM practices emphasizes the critical role of top-management commitment in driving overall SQM implementation in the organizations (Zakuan, N.M; Yusof, S.M.; Laosirihongthong, T; Shaharoun, A.M., 2010).Teh et al (2008) noted that senior leaders and management guide the organization and assess the organizational performance. Further, studies showed that top-management commitment significantly affects the quality performance (Prajogo & Brown, 2004).

Kanji (2001) asserted that top-management commitment is the fundamental driver of business excellence. Silva et al (2005) studied world class companies in Japan and Brazil and explored excellent management practices. The study concluded that the practices that foster quality culture include exemplary leadership, respect for individual, strategic approach, open communication, effective human resources management (HRM) and customer focus.

Benchmarking is an important strategic tool of strategic quality management, besides being a strategic tool for performance assessment and continuous improvement in performance (Lee, Zailani, & Soh, 2006). Benchmarking is classically seen as "a tool to improve organization's performance and competitiveness in business life" (Kyro¨, 2003). It is also defined by other researchers as a reference or measurement standard for comparison; a performance measurement that is the standard of excellence for a specific business; and a measurable, best-in-class achievement (Punniyamoorthy & Murali, 2008).

Researchers view benchmarking as an essential tool to achieve SQM objectives (Sinclair & Zairi, 2000) (Sinclair & Zairi, 2001) (Porter & Tanner, 1996) . Benchmarking is defined as the best practices to achieve superior performance. It facilitates organizations to learn from industries' best practices and align their internal and external processes for excellence. Dow et al (1999) argued that this is an important SQM practice to achieve quality objectives. Benchmarking has also been established as a catalyst for change, for example for organizations intending to embark on business process re-engineering (Thor & Jarret, 1999), improved performance and other general changes in organizational thinking and action (Cassell, Nadin, & Older , 2001) . Jarrar

and Zairi (2000) concluded that benchmarking has become an important best practice to enhance performance and achieve sustained competitive advantage.

2.2.5 Customer Focus (CF) and Employee Involvement (EI)

Organizations must be knowledgeable in customer requirements and responsive to customer demands, and measure customer satisfaction through SQM implementation (Zakuan, N.M; Yusof, S.M.; Laosirihongthong, T; Shaharoun, A.M., 2010). According to the review results from Hackman and Wageman (1995), obtaining information about customers is one of the most widely used TQM implementation practices to improve quality performance of the organization.

Deming (1986) claimed that involvement and participation of employees at all levels is a must to improve the quality of the current and future product or service. Even non-managerial employees can make significant contributions when they are involved in quality improvement processes, decision making processes, and policy making issues (Sadikoglu & Zehir, 2010). Hence Deming (1986) concluded that organizations should utilize all employees' skill and abilities to gain business performance.

2.2.6 Quality Awards and Quality Training Initiatives (QT)

There are several quality awards that organizations use for self-evaluation and adoption to manage the quality to survive in competitive environment. Deming Prize in Japan, European Quality Award in Europe, Malcolm Baldrige National Quality Award (MBNQA) in United States and Australian Quality Award are some important quality awards. Training staff in quality management is another strategic quality management initiative that enables the organization to create quality awareness amongst its

employees. These ensure a culture of quality awareness is engrained in the entire organization.

2.3 Organizational Performance

Organizational performance encompasses three specific areas of firm outcomes; financial performance (profits, return on assets, return on investment, etc.), market performance (sales, market share, etc.) and shareholder return (total shareholder return, economic value added, amongst others), Richard et al (2009). These areas of outcomes present ways in which organizational performance can be measured. Siavash et al (2013) also identified performance measurement to include total quality management, quality performance (QP), innovation performance (IP) and organizational performance (OP). This study will focus on innovation performance, quality performance and organizational performance in an effort to interrogate how MCSP SQM initiatives have impacted their performance.

Siavash et al (2013) determined that each of the four measurement variables had performance indicators as follows. The indicators for SQM are employee relations, leadership, customer relations, product/process management; QP indicators were identified as service quality, service design, serviceability; IP indicators were identified as product innovation, process innovation, innovation and continuous improvement; while OP indicators were human resources results, financial performance, and non-financial performance.

In his presentation on organization performance, Albrecht (2011) enumerates dimensions of organizational performance as strategic focus, customer value,

leadership and team performance, culture, values and ethics, process excellence, talent management and knowledge management. He also refers to them as performance drivers or *domains of excellence* (DOE). According to Albrecht (2011), strategic focus involves ongoing "strategic conversation", and continuous environmental scanning to determine a clear purpose of the firm in order to come up with priorities and driving values that will propel the organization to financial success.

Woodruff (1997) proposes that; "customer value is a customer's perceived preference for and evaluation of those product attributes, attribute performances, and consequences arising from use that facilitate (or block) achieving the customer's goals and purposes in use situations", in an attempt to consolidate many definitions of what customer value is. Albrecht (2011) argues that for an organization to achieve excellent performance it requires to set high standards for its leaders/managers in order to create executives who can lead and model other workers in the firm. This, he reckons, can be achieved by effective leader selection, leader training and development in addition to regular assessment and feedback.

Organizational culture provides a sense of organizational identity, which plays a big role towards internal integration of the members of the firm and towards external adaption of the members to the environment (Daft, 2013). Core values need to be modeled to employees by executives, Albrecht (2011); while ethics guide the decisions and behaviors of managers (Daft, 2013). Researchers have accepted organizational culture as a critical factor and essential element for implementation of quality management (Hildebrandt, Kristensen, Kanji, & Dahlgaard, 1991)

2.4 Empirical Studies on Strategic Quality Management and Organizational Performance

There exist various studies done on the impact on organization performance when strategic quality management is employed. In a paper entitled "An empirical study of critical factors of TQM in Palestinian organizations" Baidoun (2003) investigated 19 critical quality factors which he suggested that addressing these factors as part of quality management process increased the chance success in the Palestinian context. He further concludes that there are differences in the order and degree of emphasis of the quality factors.

Tummala and Tang (1994) derived, in a study entitled "Strategic quality management, Malcolm Baldrige and European quality awards and ISO 9000 certification: Core concepts and comparative analysis" a definition of strategic quality management is as a comprehensive and strategic framework linking profitability, business objectives, and competitiveness to quality improvement efforts with the aim of harnessing the human, material and information resources organization-wide in continuously improving products or services that will allow the delivery of customer satisfaction. They also concluded that one can develop an SQM implementation model based on the seven core concepts, namely customer focus; continuous improvement; strategic quality planning; design quality, speed and prevention; people participation and partnership and fact-based management, which they had investigated in their study.

Implementing and developing SQM requires major organizational commitment and effort, hence there is a need for clear evidence that SQM really has a positive impact on performance. Similarly, results should be susceptible to comparison and useful for

firms attempting to achieve total quality concludes (Santos-Vijande & Alvarez-Gonzalez, 2007). Jaafreh and Al-abedallat (2013) also concluded that there is a significant relationship between quality management dimensions (leadership, strategic planning, customer focus, and employee relation) and organizational performance. This means the managers should be concerned about these dimensions to enhance the organizational performance of the organization. Joiner (2007) from School of Business at the La Trobe University in Bundoora, Australia also carried out study on the total quality management and performance relationship with focus on the role of organization and co-worker support. In her conclusion she also not that her study had evidence supporting a strong positive relationship between the extent of implementation of SQM practices and organization performance. She noted that her study has important implications for managers; first, it motivates managers (and provides a justification) to invest in the time and resources to implement SQM programs. Hence based on the results of her study, the implementation of SQM practices is associated with enhanced organization performance. Second, her study signals the importance of ensuring a supportive organizational environment for the effective implementation of SQM. Additionally, evidence from her study suggested that organizations should develop an environment or "culture" of support, which includes fostering support among co-workers, for the effective implementation of TQM. If employees do not feel there is sufficient acknowledgement and support from the organization and from colleagues with whom they work, then firms may not reap the benefits of SQM programs, Joiner (2007) concluded.

An interesting finding came from a study by (Pignanelli & Csillag, 2008) in Brazil on the impact of quality management on profitability. The main finding in there study was

the lack of evidence of improved profitability in Brazilian companies that adopted quality management, when comparing the period before and after being recognized by FNQ (National Quality Foundation). The methodological approach used enabled to compare the results with the ones obtained by (York & Miree, 2004) with data of American companies, coming to similar conclusion: in both cases, high profitability already existed during quality management implementation, and remained high along all the studied period. This fact supports the position of (York & Miree, 2004) that the relationship between quality and financial performance is a co-variation link, and not a causation link. According to this idea, companies that already have superior performance are inclined to adopt quality management models, given to the need to legitimize or to obtain recognition, a favorable organizational environment, or having resources to apply in the necessary investments to finance the quality program, (Pignanelli & Csillag, 2008) concluded.

A similar finding came from a study done in Malaysia by (Yunoh & Ali, 2015) in which they concluded that although there are numerous studies in the field of quality management in Malaysia, the study on the implementation of quality management in SMEs and its impact on business performance is still poorly understood. Most of the research focused on the large-scale industries of manufacturing sector while SMEs is different with larger organizations in term of management style, production processes, capital and the ability to negotiate. Finally, (Yunoh & Ali, 2015) suggest that SMEs should have its own way and strategy in the implementation of quality management. In addition, the important contribution of this study is to identify the critical success factors of SQM approach.

2.5 Conceptual Framework for Strategic Quality Management and Organizational Performance.

Figure 1 below describes the conceptual framework for implementing strategic quality management indicating the independent variables or critical success factors, the intervening or moderating variables and the independent variables or performance indicators. The SQM initiatives begin with leadership which is important in developing sound strategic quality planning followed by fact-based management. Attention should also be given to employee and supplier involvement and participation, training and education, rewards and recognition as well as quality of work life environment, evaluation of performance and tracking progress based on reliable information, data and analysis, benchmarking and competitive analysis with major focus on continuous improvement, in order to satisfy customer focus to ensure customer satisfaction (Tummala & Tang, 1994). The successful implementation of the framework must generate impressive indicators such as customer satisfaction and firm's operational and financial performance results (Tummala & Tang, 1994). The intervening factors will be influenced by the innovation, policies and technology that the organization management will adopt.

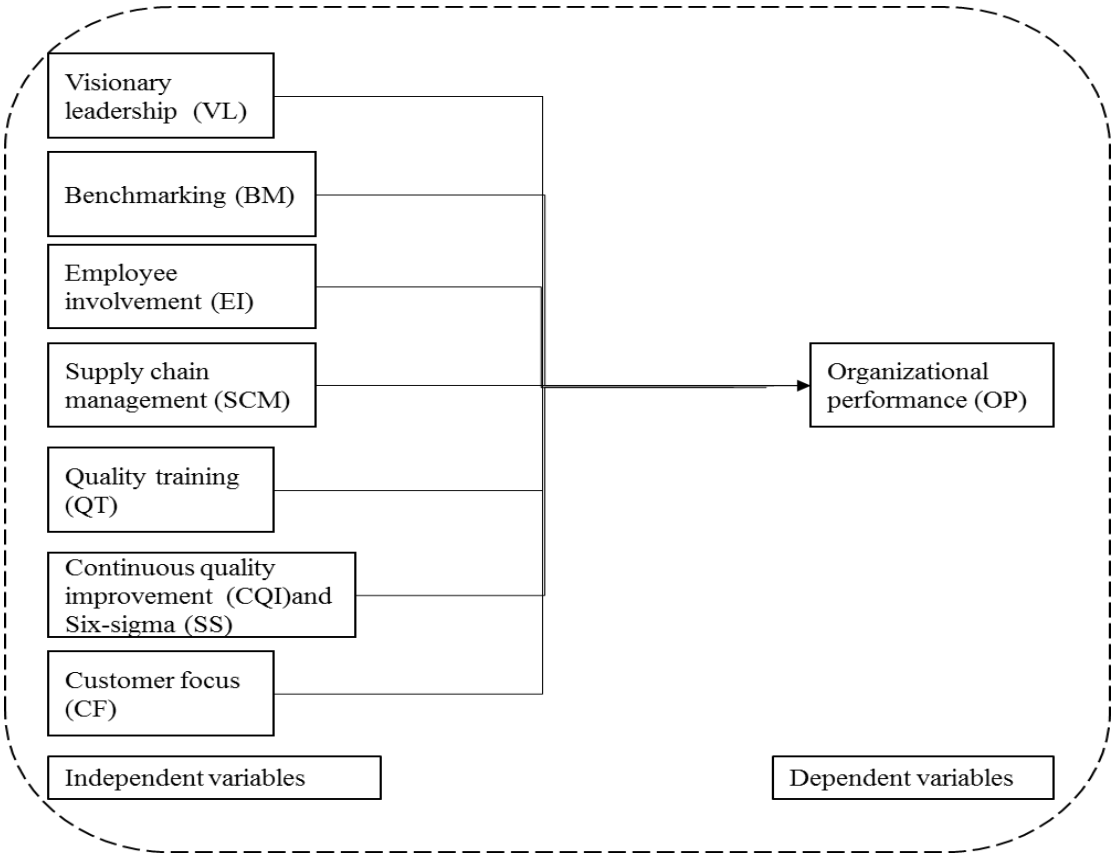

Figure 1: SQM and OP Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

This study uses cross-sectional survey research design that is descriptive to enable the study address the research question on what strategic quality management initiatives have been adopted by mobile communications service providers. The design will also respond to the question of what performance indicators are impacted by the strategic quality management initiatives instituted by mobile communications service providers.

3.2 Population of the Study

Three MCSP will be used in the study. This will be Safaricom Limited, Telkom Kenya (Orange Kenya) and Airtel Kenya. The three mobile operators are the only existing mobile operators in Kenya after the recent acquisition of the fourth largest (Essar Telecom) mobile operator by market by the top two. There's an additional operator named Equitel who however are operating as a mobile virtual network operator (MVNO) by sharing core network infrastructure with Airtel Kenya. For the purposes of this study they will not be included.

3.3 Sample Design

Table 3.1 below indicates the estimated number of employees per operator. All managers with the three operators will be used as target population. The total number of the employees working with these operators is about six thousands. Random probability sampling will be used with a sample size of fifty managers which will consist top management, middle management and operational managers. These

managers will be from the various departments and divisions in the organizations including information technology, engineering, procurement, human resources, finance, sales, operations and customer services.

Table 3.1 MCSP in Kenya - Estimate Number of Employees and Sample Size

Mobile Operator	Estimate number of employees	Sample size
Safaricom	3500	25
Airtel Kenya	1500	15
Orange Kenya	1000	10
Total	**6000**	**50**

The assumptions made in the sampling are that management staff constitutes twenty per cent of the entire staff complement and the questionnaire forms will be send to ten per cent of the management team with the probability that between thirty per cent and forty per cent of the respondents will complete the questionnaire.

3.4 Data Collection

Data collection will be done in the form a questionnaire. The target participants in expected to respond to the questionnaire are fifty. Two hundred questionnaire forms will be sent to senior or strategic mangers, middle level managers and operational managers, equally among the three operators. This questionnaire will be used for quantitative statistical analysis. The questionnaire has been adopted from one that was developed by Douglas and Fredendall (2004). The scale used by Anderson et al (1995) will be used in this study for measuring customer satisfaction. Five points Likert rating scale ranging from very great extent (5) to very small extent (1) was adopted for the

study, see appendix A. The questionnaire has three sections. Section A, section B and section C. Section A provides opportunity for respondents to provide demographic data while section B covers the SQM initiatives. Lastly, section C covers the organizational performance indicators impacted by the SQM initiatives.

3.5 Data Analysis

Data analysis will be based on the research questions designed at the beginning of the research. Frequency tables, percentages, means and standard deviation will be used to analyze the data. Responses in the questionnaires will be tabulated, coded and processed by use of a computer. Once the responses are received, the questionnaires will be edited for completeness and consistency before processing. Descriptive statistics will be used to determine the most frequent response using the mode while the mean will be used to determine the average response of the relationship between the variables under study. Factor analysis will also be used to validate the research instruments constructs. Regression model will also be used to determine the relationship between the variables under the study while descriptive narrative will be used to record the results of open-ended questions. The presentation of the data will be done by use of tables and charts. All the results will be compared with the literature review to determine the strategic quality management initiatives implemented by MCSP and how they have impacted MCSP organization performance.

The regression model will derive the variables from the research question and the conceptual framework with the hypothesis that the relationship between the variables are linear. Hence the hypotheses shall be derived from the conceptual model in figure 1 and represented as below; using path analysis.

$$y = a_0 + a_1x_1 + a_2x_2 + a_3x_3 + \ldots\ldots a_nx_n + e$$

Where

y = dependent variables (left-most variable per figure 1)

$x_1, x_2, x_{3,\ldots} x_n$ = independent variables (right-most variable as per figure 1)

$a_1, a_2, a_3, \ldots a_n$= regression coefficients

e = error – other factors affecting performance apart from SQM

a_0 = constant value when dependent variables (right-most variable as per figure 1)

n = number independent of variables

Below are the hypotheses derived from the literature review and the conceptual model in figure 1.

H1. Visionary leadership positively influences organizational performance.

H2. Benchmarking positively influences organizational performance.

H3. Employee involvement positively influences organizational performance.

H4. Supply chain management positively influences organizational performance.

H5. Quality training positively influences organizational performance.

H6.Continuous quality improvement and six-sigma positively influences organizational performance.

H7. Customer focus positively influences organizational performance.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter will focus on analysis, interpretation and discussion of the data collected during the survey. Through the interpretation and the discussion, the chapter will also seek to address the two objectives of the study i.e to determine the strategic quality management initiatives undertaken by mobile communications service providers (MCSP) in Kenya and to establish the relationship between strategic quality management initiatives and organizational performance in MCSP in Kenya. The questionnaire has three sections. The questionnaire provides opportunity for respondents to provide demographic data, respond to the SQM initiatives questions and lastly, it covers the organizational performance indicators impacted by the SQM initiatives.

4.2 Demographic Analysis

A total of sixty five questionnaires were administered to various managers at the three mobile communications service providers. Thirty questionnaires were sent to Safaricom, twenty questionnaires were to Airtel Kenya and fifteen of them to Telkom Kenya. A total of fifty three managers across the three firms completed the questionnaires and returned them in time for the analysis, representing over 80% response rate. Among the respondents were 64.2% male and 35.8% female. Of all the responses received from 20.8% were from operational level managers, 62.3% from middle-level managers while 17% were from senior managers. More respondents have been with the firms for more than five years and less than ten years representing 52.8% of all those who respondent to the questionnaire, while other worked at the firms for

less five representing 24.5% of the respondents. Those who have been with the firms for over ten years stand at 22.6% of the total number of respondents. The survey also revealed that none of the organizations has a PhD holder, however many respondents have a master's degree standing at 54,7% of the respondents. Other have bachelor's degree (43.4%) while very few have diploma (1.9%) level of education.

4.3 Strategic Quality Management Initiatives Undertaken By Mobile Operators in Kenya

One of the main objectives of this study was to determine the strategic quality management initiatives undertaken by mobile communications service providers (MCSP) in Kenya. The questions in section B in the questionnaire were aimed at finding out to what extent have the firms implemented visionary leadership (VL), employee involvement (EI), continuous quality improvement (CQI), supplier involvement (SI), benchmarking (BM), quality training (QT) and customer focus (CF) as strategic quality initiatives in an effort to improve their performance. Several questions were formulated under each of these initiatives which formed part of the questionnaire. The respondents were provided with five options to choose from on a Likert scale as very great extent (5), great extent (4), medium extent (3), small extent (2) and very small extent (1). The results for each initiative are analyzed, discussed and interpreted separately in the following sections.

4.3.1 Implementation of Visionary Leadership Initiatives in Mobile Communications Services Providers in Kenya

Visionary leadership in one of the strategic quality management initiatives adopted by mobile operators in Kenya.

Respondents were required to indicate to what extent they agreed with this statement in relation to adoption of strategic quality initiatives by mobile operators in Kenya. They responded on the various indicators based on the five-point Likert scale (5=very great extent, 4=great extent, 3=medium extent, 2=small extent, and 1=very small extent). The research findings are in the table 4.1 below indicating the mean scores and the standard deviations of each variable.

Table 4.1 Findings on Adoption of Visionary Leadership as a Strategic Quality Management Initiative in Mobile Operators in Kenya

Code	Visionary leadership strategic initiative	Mean Score	Standard Deviation
VL1	Our organization's top management takes responsibility for quality and has objectives for quality performance.	4.925	.2667
VL6	Our company's top management has objectives for quality performance	4.925	.2667
VL2	Our company's top management provides personal leadership for quality products and quality improvement	4.604	.4938

VL4	Department heads within our company participate in the quality improvement process	4.585	.5347
VL3	Our company's top management is evaluated for quality performance	4.585	.4975
VL5	Quality issues are reviewed in our company's management meetings	4.585	.5347
	Grand Mean Score	**4.70**	

The findings indicate that visionary leadership is undertaken by mobile operators in Kenya to a very great extent (mean ≥ 4.5). Mobile operators' top management take responsibility for quality and have objectives for quality performance to very great extent (4.925). Top management in mobile operators provide personal leadership for quality products and quality improvement to a very great extent (4.604).Heads of departments participate in quality improvement processes (4.585) as well as being evaluated on quality performance (4.585). Quality issues are discussed at management meetings (4.585) and firms' top management has quality performance objectives (4.925).

From these findings it's a clear indication that mobile communications service providers have adopted visionary leadership to very great extent with a grand mean score of (4.70).

These findings are in line with the studies which show that top-management commitment significantly affects the quality performance (Prajogo & Brown, 2004).

4.3.2 Employee Involvement Initiatives in Mobile Communications Services Providers in Kenya.

Employee involvement is a key strategic quality management initiative undertaken by mobile communications services providers in Kenya.

Respondents were asked to indicate to what extent they agreed with this statement in relation to adoption of strategic quality initiatives by mobile operators in Kenya. They responded on the various indicators based on the five-point Likert scale (5=very great extent, 4=great extent, 3=medium extent, 2=small extent, and 1=very small extent). The research findings are in the table 4.2 below indicating the mean scores and the standard deviations of each variable.

Table 4. 2 Findings of employee involvement in strategic quality management in mobile operators in Kenya

Code	**Employee involvement strategic quality initiative**	**Mean Score**	**Standard Deviation**
EI1	Our company gives feedback to employees on their quality performance.	4.453	.7485
EI4	Supervisors encourage the persons who work for them to work as a team	4.208	.4094
EI3	Non-supervisory employees are involved in quality decisions	4.132	.4819
EI2	Our employees are recognized for superior quality improvement	4.113	.5428
	Grand Mean Score	**4.23**	

To a great extent (4.23) mobile operators in Kenya involve their employees in strategic quality management as indicated in table 4.2 above. The firms give feedback to employees on their quality performance (4.453). Mobile operators in Kenya recognize their employees for superior quality improvement (4.113).Besides, non-supervisory employees are involved in quality decisions (4.132) while supervisors encourage the persons who work for them to work as a team (4.208) in mobile operators in Kenya.

This is indicates that mobile service providers in Kenya involve their staff in strategic quality processes.

These results are in line with Deming (1986) claim that involvement and participation of employees at all levels is a must to improve the quality of the current and future product or service.

4.3.3 Continuous Quality Improvement and Six-Sigma Initiatives Adoption By Mobile Communications Services Providers In Kenya

Mobile operators in Kenya have implemented continuous quality improvement and six-sigma as a practice for strategic quality management.

Respondents were requested to indicate to what extent they agreed with this statement in relation to adoption of strategic quality initiatives by mobile operators in Kenya. They responded on the various indicators based on the five-point Likert scale (5=very great extent, 4=great extent, 3=medium extent, 2=small extent, and 1=very small extent). The research findings are in the table 4.3 below indicating the mean scores and the standard deviations of each variable.

Table 4. 3 Findings on Continuous Quality Improvement and Six-Sigma Adoption in Mobile Operators

	Continuous quality improvement strategic quality initiative	**Mean Score**	**Standard Deviation**
CQI1	Continuous quality improvement is important goal of this organization	4.868	.3941
CQI4	In our company, members of a quality improvement team have their roles and responsibilities specifically identified	4.830	.6119
CQI8	All improvement projects are reviewed regularly during the process	4.415	.6335
CQI9	We keep records about how each continuous improvement project is conducted	4.019	.3095
CQI10	In our firm, the product design process follows a formalized procedure	3.962	.5175
CQI6	In our company, an employee's role in the black/green structure (or equivalent structure) is considered when making compensation and promotion decisions	3.943	1.0080
CQI7	In our firm, continuous improvement projects are conducted by following a formalized procedure (such as DMAIC—Define, Measure, Analyze, Improve and Control)	3.906	.3543

CQI2	We employ a black/green belt role structure (or equivalent structure) for continuous improvement	3.660	.6488
CQI3	We use a black/green belt role structure (or equivalent structure) to prepare and deploy individual employees for continuous improvement programs	3.585	.6335
CQI5	The black/green belt role structure (or equivalent structure) helps our company to recognize the depth of employees' training and experience	3.528	.6962
	Grand Mean Score	4.07	

Continuous quality improvement is important goal of mobile operators in Kenya (4.868). Mobile operators in Kenya employ black/green belt role structure (or equivalent structure) for continuous improvement to a medium extent (3.660). The operators also use a black/green belt role structure (or equivalent structure) to prepare and deploy individual employees for continuous improvement programs to a great extent (3.585). To a great extent members of a quality improvement teams have their roles and responsibilities specifically identified (4.830). The black/green belt role structure (or equivalent structure) helps mobile operators to recognize the depth of employees' training and experience to a medium extent (3.528). For mobile operators in Kenya employee's role in the black/green structure (or equivalent structure) is considered when making compensation and promotion decisions (3.943). Continuous improvement projects are conducted by following a formalized procedure (such as DMAIC—Define, Measure, Analyze, Improve and Control) for mobile operators in Kenya (3.906). Mobile operators in Kenya regularly review all improvement projects

are during the process (4.415) while keeping records about how each continuous improvement project is conducted (4.019). Product design process follows a formalized procedure for mobile operators in Kenya (3.962). To a great extent (mean ≥4.0) continuous improvement and six-sigma have been adopted by mobile operators in Kenya as per table 4.3 above.

These findings indicate that continuous quality improvement has been implemented to a great extent while six-sigma has been adopted to a great extent. These findings are in tandem with (National Learning Consortium, 2013) conclusion that continuous improvement begins with the culture of improvement for tasks, activities and projects which in turn impact on organization processes improvement.

4.3.4 Supply chain management adoption by mobile communications services providers in Kenya.

Supplier involvement is important ingredient in ensuring adoption of strategic quality management in mobile operators in Kenya.

Respondents were asked to indicate to what extent they agreed with this statement in relation to adoption of strategic quality initiatives by mobile operators in Kenya. They responded on the various indicators based on the five-point Likert scale (5=very great extent, 4=great extent, 3=medium extent, 2=small extent, and 1=very small extent). The research findings are in the table 4.4 below indicating the mean scores and the standard deviations of each variable.

Table 4. 4 Findings on Supplier Involvement Strategic Quality Initiative in Mobile Operators in Kenya

	Supplier involvement strategic quality initiative	**Mean Score**	**Standard Deviation**
SI4	The organization provides education and clear specifications are provided to its suppliers.	4.340	.6184
SI6	Our suppliers are evaluated according to quality, delivery performance, and price, in that order	4.340	.6184
SI2	We strive to establish long-term relationships with suppliers	3.962	.9600
SI3	We rely on a small number of high quality suppliers	3.906	.2951
SI5	Our suppliers are actively involved in our product design/redesign process	3.906	.3543
SI7	Our company has a thorough supplier rating system	3.906	.5286
SI1	Our suppliers are selected based on quality rather than price	3.566	.6048
SI9	We provide technical assistance to our suppliers	3.509	.5047
SI8	Our suppliers are involved in our quality training	3.491	.5047
	Grand Mean Score	**3.88**	

Mobile operators in Kenya select suppliers based on quality rather than price (3.566) as they try to establish long-term relationships with suppliers (3.962). Mobile operator sin Kenya also rely on a small number of high quality suppliers (3.906). The organizations provide education and clear specifications are provided to its suppliers (4.340).

Suppliers for MCSP are actively involved in our product design/redesign process (3.906). The suppliers are also evaluated according to quality, delivery performance, and price, in that order (4.340).Mobile operators in Kenya have a thorough supplier rating system (3.906) besides ensuring that they are involved in our quality training (3.491). Mobile operators in Kenya provide technical assistance to their suppliers (3.509). As per table 4.4 above to a great extent (mean ≥ 3.5) mobile operators in Kenya have involved their suppliers in quality manage processes.

This indicates that mobile operators in Kenya have implemented supply chain management with overall mean of (3.88).

This finding is congruent with argument supported by Zineldin and Fonsson (2000), who found that developing supplier partnership and long-term relationships can increase the organization competitiveness and thus, improve performance.

4.3.5 Benchmarking Adoption by Mobile Communications Services Providers in Kenya

Benchmarking has been adopted by mobile operators in Kenya as part of strategic quality initiatives to improve organizational performance.

Respondents were asked to indicate to what extent they agreed with this statement in relation to adoption of strategic quality initiatives by mobile operators in Kenya. They responded on the various indicators based on the five-point Likert scale (5=very great extent, 4=great extent, 3=medium extent, 2=small extent, and 1=very small extent). The research findings are in the table 4.5 below indicating the mean scores and the standard deviations of each variable.

Table 4. 5 Findings of Benchmarking Strategic Quality Initiative in Mobile Operators in Kenya

	Benchmarking strategic quality initiative	**Mean Score**	**Standard Deviation**
BM1	Our firm leverages on best available technology to deliver quality products compared to our competitors	4.453	.5394
BM2	Our company uses benchmarking as a tool to gauge performance in the industry	4.453	.5740
BM3	Our company makes comparison with other players in the industry to sustain competitiveness	4.453	.5394
BM4	We consider benchmarking as a catalyst for change	4.434	.5721
	Grand Mean Score	**4.45**	

Mobile operators in Kenya undertake benchmarking to a very great extent (mean ≥ 4.45).They leverage on best available technology to deliver quality products compared to our competitors (4.453). They use benchmarking as a tool to gauge performance in the industry (4.453).Mobile operators make comparisons with other players in the industry to sustain competitiveness (4.453), and they consider benchmarking as a catalyst for change (4.434).

This indicates that mobile operators in Kenya have embraced benchmarking as a strategic quality initiative with an overall mean score of (4.45). This finding agrees with Jarrar and Zairi (2000) who concluded that benchmarking has become an important best practice to enhance performance and achieve sustained competitive advantage.

4.3.6 Quality Training Adoption by Mobile Communications Services Providers in Kenya

Quality training is a key ingredient in strategic quality management initiatives adoption by mobile operators in Kenya.

Respondents were required to indicate to what extent they agreed with this statement in relation to adoption of strategic quality initiatives by mobile operators in Kenya. They responded on the various indicators based on the five-point Likert scale (5=very great extent, 4=great extent, 3=medium extent, 2=small extent, and 1=very small extent). The research findings are in the table 4.6 below indicating the mean scores and the standard deviations of each variable.

Table 4. 6 Findings on Quality Training Strategic Quality Initiative among Mobile Operators in Kenya

	Quality training strategic quality initiative	**Mean Score**	**Standard Deviation**
QT3	Training is given in the ‘‘total quality concept’’ (i.e., philosophy of company-wide responsibility for quality) in our company	4.340	.7056
QT1	Quality-related training is given to employees throughout the organization, including managers and supervisors.	4.000	.3922
QT2	Training is given in the basic statistical techniques (such as histogram and control charts) in our organization	3.509	.6686
	Grand Mean Score	**3.95**	

To a great extent (mean ≥ 3.5) mobile operators in Kenya undertake quality training. Quality-related training is given to employees throughout the organizations, including managers and supervisors (4.000). Training is given in the basic statistical techniques (such as histogram and control charts) in our organization (3.509) and training is given in the ‘‘total quality concept’’ (i.e., philosophy of company-wide responsibility for quality) in among mobile operators in Kenya (4.340).

This indicates that mobile operators in Kenya have adopted quality training as a strategic quality management initiative as per the overall mean of (3.95).

4.3.7 Customer Focus Adoption by Mobile Communications Services Providers in Kenya

Customer focus has been undertaken by mobile operators in Kenya in order to improve their performance.

Respondents were asked to indicate to what extent they agreed with this statement in relation to adoption of strategic quality initiatives by mobile operators in Kenya. They responded on the various indicators based on the five-point Likert scale (5=very great extent, 4=great extent, 3=medium extent, 2=small extent, and 1=very small extent). The research findings are in the table 4.7 below indicating the mean scores and the standard deviations of each variable.

Table 4. 7 Findings on Customer Focus Strategic Quality Initiative Adoption among Mobile Operators in Kenya

	Customer focus strategic quality initiative	**Mean Score**	**Standard Deviation**
CFI1	Our company uses customer requirements as the basis for quality	4.906	.3543
CFI6	Our company measures our external customers' satisfaction	4.453	.5025
CFI4	Our employees know who our customers are	4.358	.5914
CFI2	We frequently are in close contact with our customers	4.057	.3048
CFI3	Our customers give us feedback on quality and delivery performance	3.566	.5721
CFI5	Our customers visit our offices	3.453	.6375
	Grand Mean Score	**4.13**	

To a great extent (mean = 4.13) mobile operators in Kenya have focused on their customers for improving performance of the organizations. They use customer requirements as the basis for quality (4.906).They are frequently in close contact with their customers (4.057). Mobile operators' customers give them feedback on quality and delivery performance (3.566) while their employees know who the mobile operators' customers are (4.358). Customers visit MCSP's offices (3.453) as the mobile operator measures external customers' satisfaction (4.453).

This indicates that customer focus is key as part of strategic quality management initiatives towards realization of organizational performance. This is in line with

Hackman and Wageman (1995), who concluded that obtaining information about customers is one of the most widely used quality management implementation practices to improve quality performance of the organization.

4.4 Relationship between Strategic Quality Management Initiatives and Organizational Performance of Mobile Operators in Kenya

Strategic quality management initiatives undertaken by mobile operators in Kenya positively influence the performance of these organizations. Descriptive statistics and regression analysis has been used to analyze the results of the survey in order to determine if respondents agreed with this statement.

4.4.1 Descriptive analysis of organizational performance among mobile communications services providers in Kenya in relation to adoption of SQM initiatives.

Respondents were asked to indicate to what extent they agreed with this statement in relation to how adoption of strategic quality initiatives by mobile operators in Kenya impact the mobile operators' organization performance. They responded on the various indicators based on the five-point Likert scale (5=very great extent, 4=great extent, 3=medium extent, 2=small extent, and 1=very small extent). The research findings are in the table 4.8 below indicating the mean scores and the standard deviations of each variable.

Table 4. 8 Findings of Organizational Performance among Mobile Operators Who Have Adopted SQM Initiatives in Kenya

	Organizational performance	**Mean Score**	**Standard Deviation**
OP6	The quality of our company's products and services has been improved since introduction of quality management	4.868	.4402
OP7	The delivery of our products and services has been improved	4.868	.3941
OP9	Our company's sales have grown with adoption of quality management	4.830	.4268
OP5	In general, our firm has recorded fewer network disruptions due to adoption of quality management initiatives	4.491	.5047
OP4	Return on assets of our company has increased	4.415	.5695
OP1	Our firm has realized increased in profitability due to quality of our products and services with adoption of SQM	4.415	.5695
OP2	Our company's operating income has grown	4.396	.5664
OP3	Our company's profits have grown	4.396	.5664
OP10	Our market share has grown with adoption of quality management	4.358	.5914
OP8	Customer satisfaction with the quality of our products and services has increased	4.057	.2333
	Grand Mean Score	**4.51**	

To a very great extent (mean ≥ 4.5) mobile operators who have initiated strategic quality management initiatives have shown increase in organizational performance. Mobile operators have realized increase in profitability due to quality of our products and services with adoption of quality management (4.415).Mobile operators operating income has grown (4.396). MCSP have also shown increase in profits (4.396) as well as increase in return on assets (4.415). In general, mobile telephony firms have recorded fewer network disruptions due to adoption of quality management initiatives (4.491). The quality of mobile operators' products and services has been improved since introduction of quality management (4.868). The delivery of products and services by mobile operators has been improved (4.868) while at the same time customer satisfaction with the quality of the operators products and services has increased (4.057).Mobile operators sales have grown with adoption of quality management (4.830). Mobile operator's market share has grown with adoption of quality management (4.358).

This indicates that with the adoption of strategic quality initiatives among mobile communications service providers in Kenya the organizations have realized increased organizational performance as shown by the gran mean score of (4.51).

4.4.2 Regression Analysis of The Relationship between Adoption of SQM Initiatives and Organizational Performance among Mobile Communications Services Providers in Kenya

Adoption or implementation of strategic quality management initiatives has a positive effect on the organization performance of mobile communications service providers in Kenya.

The conceptual model was used to provide the basis for formulation of a regression equation as indicated below.

$$OP=\alpha + \beta_1 VL + \beta_2 EI + \beta_3 BM + \beta_4 CQI + \beta_5 SI + \beta_6 QT + \beta_7 CF + \varepsilon$$

Where

OP = organizational performance (dependent variable)

VL = visionary leadership (independent variable)

BM = benchmarking (independent variable)

CQI = continuous improvement and six-sigma (independent variable)

EI = employ involvement (independent variable)

SI = supplier involvement (independent variable)

QT = quality training (independent variable)

CF = customer focus (independent variable)

α = constant

ε = error due to unobserved variables

β_1 ------ β_n = coefficients for the independent variables.

Using the results from the questionnaire a composite matrix was developed to come up with columns for independent variables which are the strategic quality initiatives and dependent variable which is the organizational performance in an excel sheet. The regression analysis was run on the composite matrix of seven independent variables and one dependent variable and the results as per the table 4.9 below.

Table 4. 9 R-square

Regression Statistics	
Multiple R	0.857315953
R Square	0.734990644
Adjusted R Square	0.693766966
Standard Error	0.186485343
Observations	53

The R-square of 0.734in table 4.9 above implies a variance in the organizational performance of mobile operators can be explained by at least 73% combined variance in the visionary leadership, benchmarking, employee involvement, continuous quality improvement, quality training, supplier involvement and customer focus.

This indicates that strategic quality management initiatives among mobile operators in Kenya greatly influence their performance ($R^2 = 0.734$).

Table 4. 10 Regression coefficients

SQM Initiatives	**Coefficients**	**Standard Error**	**t Stat**	**P-value**
Visionary leadership	0.217555956	0.119464114	1.821098818	0.075244326
Employee involvement	0.040132389	0.092984232	0.43160424	0.668089949
Continuous quality improvement and Six-sigma	0.091860977	0.173901766	0.528234873	0.599931842
Supplier involvement	0.036884151	0.162923706	0.226389098	0.821924020
Benchmarking	0.4457054	0.081334165	5.479928374	0.000001834
Quality training	0.220807069	0.20590174	1.072390495	0.289262234
Customer focus	0.161370354	0.208301487	0.774696121	0.442570948

As seen from table 4.10 above, the coefficients of the independent variables (the SQM initiatives) are all positive indicating a positive gradient of all of them which shows that for every increase/decrease in an independent variable there is a corresponding increase/decrease in the dependent variable. For every unit change in visionary leadership, there's a 0.217555956 change in organizational performance. For every unit

change in employ involvement, there is a 0.040132389 change in organizational performance. For every unit change in Continuous quality improvement and Six-sigma, there is a 0.091860977 in organizational performance. For every unit change in supplier involvement, there is a 0.036884151 change in organizational performance. For every unit change in unit benchmarking there is a 0.4457054 change in organizational performance. For every unit change in quality training, there is a 0.220807069 change in organizational performance, and for every unit change in customer focus, there is a 0.16137035 change in organizational performance among mobile operators in Kenya.

These results indicate that the strategic quality management initiatives among mobile communications service providers in Kenya positively impact the organizational performance of these firms.

4.4.3 Organizational Performance Indicators of Mobile Communications Services Providers in Kenya

Organizational performance indicators show the empirical evidence that there's a positive effect to the performance of a mobile operator organization when it adopts strategic quality management initiatives.

Respondents were requested to input revenues, ebidta, market, average number of new customers per year, churn per year and minutes of use as indicated in table 14 for three year (2012, 2013 and 2014).

Table A.1 shows some of the financial indicators to support the hypotheses that adoption of strategic quality management initiatives result in improved financial performance of mobile operators. Minutes of use for the three MCSP have been increasing from 2012 through to 2014. Safaricom had 21,753,029,214 minutes of use

in 2012, 24,663,027,792 in 2013 and 24,880,279,284 in 2014. Airtel Kenya had 2,930,054,951.00 minutes of use in 2012, 3,569,818,888.00 in 2013 and 5,183,625,480.00 in 2014. Telkom Kenya had 2,066,666,495.00 minutes of use in 2012 835,728,812.00 in 2013 and 1,834,410,112.00 in 2014. As far as revenue is concerned only information about Safaricom was available as the other two operators could not release their information due to confidentiality concerns. Safaricom's revenue was KES 107,000,000,000.00, KES 124,290,000,000.00 and KEs 144,670,000,000.00 for the year 2012, 2013 and 2014 respectively.

This indicates that adoption of strategic quality management initiatives has positive effect on operational and financial performance of mobile operators in Kenya which in tune positively impacts the general organizational performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter will summarize the interpretations and discussions of the study findings and make a conclusion based of the data interpretation, state the limitations experienced during the study. This chapter will also make recommendations for further survey besides making recommendations for policy, industry and academia as well.

5.2 Summary of Findings

The results of the survey indicate that 100.00% of the respondents agree that mobile communications service providers have adopted strategic quality management initiatives. Table 4.1 through to table 4.7 show that the lowest grand mean score of the 5-point Likert scale was 3.88 and the highest grand mean was 4.70. The most adopted SQM initiative is visionary leadership with a grand mean score of 4.70 and the least adopted is supply chain management initiative with a mean score of 3.88 as shown in table 4.4.

The study also indicates that respondents agree that the adoption of SQM initiatives positively impact the performance of the mobile communications service providers. This is evident from table 4.8 where the grand mean score for organizational performance is 4.51. Table 4.10 also shows, using regression analysis via SPSS, that there exist correlation between SQM initiatives and organizational performance. This is indicated by the positive values of R-squared and adjusted R-squared.

5.3 Conclusion

This study set out to determine if mobile communications service providers have undertaken and adopted strategize quality management initiatives in their processes. Secondly the study's second objective was to provide a link or relationship between strategic quality management initiatives and organizational performance in Kenya. Majority of the respondents agree that indeed mobile communications operators in Kenya have initiated strategic management initiatives. All the respondents do also agree that the SQM initiatives positively affect the performance of their firms. Therefore as per study findings managers of mobile operators in Kenya agree that these firms have achieved better organizational performance as indicated in table A.1, which indicates increased financial performance and increase in subscribers.

5.4 Limitations of the study

The study did not cover the recently formed mobile communications service provider, Equitel. Besides, due to the transition of one of the operators who has been acquired by Airtel and Safaricom, the operator was not covered in the study. This operator was formerly known as Essar.

Due to the limited time to conduct the study the sample size was not big enough to carry out deeper correlation and factor analysis of all the variables. Some of the respondents were not willing to provide information such as the financial performance, the minutes of use, number of churned users amongst other pieces of information which was requested for in the questionnaire.

5.5 Recommendations for Industry and Policy

This study indicates that mobile operators' managers need to focus on strategic quality management initiatives as they clearly have a positive impact on organizational performance of they are adopted and implemented. They have a negative impact if they are not adopted. Therefore it's recommended that managers take these initiatives seriously in their routine processes to ensure increased output.

Policy makers, especially the government regulatory authorities, need to emphasize on key quality indicators by mobile communication service providers in order to ensure that customers receive quality services. Regulations can be devised to guide sustainable adoption of SQM initiatives besides establishing appropriate monitoring regimes.

5.6 Recommendations for Further Study

Further research is required in these field in order to capture more respondents to get better analysis of the variables. This is study did not include all the strategic quality management initiatives and practice hence further research can include these initiatives in the mobile communications service providers space.

There is also need to narrow down on each of the variables or strategic quality initiatives and research on how each of them separately impact the performance of mobile communication services providers in Kenya. For instance, a research can be carried to determine the impact of six-sigma and continuous improvement on the financial performance of mobile operators.

REFERENCES

Albrecht, K. (2011). Organizational Performance. *Meeting the Challenges of The New Business Environment*.

Anderson, J., Rungtusanatham, M., & Schroeder, R. (1995). A path analytic Model of a theory of quality management underlying the Deming management method: Preliminary empirical findings. *Decision Sciences, 26*, 637-658.

Baidoun, S. (2003). An empirical study of critical factors of TQM in Palestinian organizations. *Logistics Information Management*, Volume 16.2 Pg 156-171.

Bantilan, I. J. (2012, November 5). *Marketing: Wisdom of Understanding Six Sigma*. Retrieved October 15, 2014, from Wordpress Blog Website: http://archian.wordpress.com/2012/11/05/marketing-wisdom-of-understanding-six-sigma/

Belay, A. M., Helo, P., Takala, J., & Kasie, F. M. (2011). Effects of Quality Management Practices and Concurrent Engineering in Business Performance. *International Journal of Business and Management*, Vol. 6, No. 3.

Brown, M. G. (1991). *Baldrige award-winning quality.* White Plains, NY: Quality Resources.

Campbell, J. P. (1990). *Modeling the performance prediction problem problem in industrial and organisational psychology. In M. D. Dunnette & L. M. Hough (Eds.)* (Vols. Handbook of industrial and organisational organisational 2nd ed. vol. 1:687-732). Palo Alto. CA: Consulting Psychologists Press.

Cassell, C., Nadin, S., & Older , G. (2001). The use and effectiveness of benchmarking in SMEs. *Benchmarking: An International Journal*, Vol. 8 No. 3, pp. 212-22.

Cohen, S., & Brand, R. (1993). *Total quality management in government: A practical guide for the real world.* San Francisco: Jossey-Bass.

Daft, R. L. (2013). *Organization Theory and Design.* Mason, OH: Erin Joyner.

Dean, J. W., & Evans, J. (1994). *Total quality: Management, organisation, and strategy.* St. Pail, MN: West.

Deming, W. E. (1986). *Out of Crisis.* Cambridge: Massachusetts Institute of Technology, Centre for Advanced Engineering Study.

Deming, W. E. (1993). *The new economics for industry, government, education.* Cambridge: Massachusetts Institute of Technology. Centre for Advance Engineering Study.

Douglas, T. J., & Fredendall, L. D. (2004). Evaluating the Deming Management Model of Total Quality in Services. *Decision Sciences, 35,* 393-422.

Dow, D., Samson, D., & Ford, D. (1999). Exploring the myth: do all quality management practices contribute to superior quality performance. *Production and Operations Management*, Vol. 8 No. 1, pp. 1-27.

Edwards, J. P., Huang, D. T., Metcalfe , L. N., & Sainfort, F. (2008). Maximizing your investment in EHR: Utilizing EHRs to inform continuous quality improvement. *Health Infromation Management*, 22(1):32-7.

Goldberg, J. S., & Cole, B. R. (2002). Quality management in education: building excellence and equity in student performance. *Quality Management Journal*, Vol. 9 No.4, pp.8-22.

Hackman, J., & Wageman, R. (1995). Total quality management: empirical, conceptual, and practical issues. *Administrative Science Quarterly*, Vol. 40, pp. 309-342.

Hildebrandt, S., Kristensen, K., Kanji, G., & Dahlgaard, J. J. (1991). Quality culture and TQM. *Total Quality Management*, 2(1), 1-15.

Hossein Nadali Najafabadi;Sanaz Sadeghi;Pouya Habibzadeh. (2008). Total Quality Management in Higher Education Case Study: Quality in Practice at University College of Borås.

Jaafreh, A. B., & Al-abedallat, A. Z. (2013). The Effect of Quality Management Practices on Organizational Performance in Jordan: An Empirical Study. *International Journal of Financial Research*, Vol. 4, No. 1;.

Jarrar, Y., & Zairi, M. (2000). Best practice transfer for future competitiveness: a study of best practices. *Total Quality Management,*, Vol. 11 No. 4/5/6, pp. 734-40.

Joiner, T. A. (2007). Total quality management and performance : The role of organization support and co-worker support. *International Journal of Quality & Reliability Management*, Vol. 24 No. 6,.

Juran, J. M. (1989). *Juran on leadership for quality: An executive handbook.* Wilson, CT: Juran Institute.

Kanji, G. (2001). Forces of excellence in Kanji's business excellence model. *Total Quality Management*, Vol. 12, pp. 259–272.

Khan, M. A. (2009). *TOTAL QUALITY MANAGEMENT PERSPECTIVE OF CELLULAR MOBILE TELEPHONE OPERATORS IN PAKISTAN.* ISLAMABAD.

Kyro¨, P. (2003). Revising the concept and forms of benchmarking. *Benchmarking: An International Journal*, Vol. 10 No. 3, pp. 210-25.

Lee, Y. P., Zailani, S., & Soh, K. L. (2006). Understanding factors for benchmarking adoption: new evidence from Malaysia. *Benchmarking: An International Journal*, Vol. 13 No. 5,pp. 548-65.

Magutu, P. O., Mbeche, P. I., Nyaoga, R. B., Nyamwange, O., Onger, R. N., & Ombati, T. O. (2010). *QUALITY MANAGEMENT PRACTICES IN KENYAN EDUCATIONAL INSTITUTIONS: THE CASE OF THE UNIVERSITY OF NAIROBI.* Nairobi.

Markus, L. H. (2004). *Performance Management - Problems and Potential.* Aukland, New Zealand: Centranum Ltd.

Muturi, P., Maranga, S., & Getecha, C. (2013). *A Survey Of Quality Management Practices In The Kenyan Small And Medium Manufacturing Industries.* Nairobi.

National Learning Consortium. (2013). *Continuous Quality Improvement (CQI) Strategies to Optimize your Practice.* Health Information Technology Research Center (HITRC).

Nekoueizadeh, S., & Esmaeili, S. (2013). A study of the impact of TQM on organizational performance of the telecommunication tndustry in Iran. *European Online Journal of Natural and Social Sciences 2013*, vol.2, No. 3(s), pp. 968-978.

Oakland, J. (1989). *Total quality management.* Oxford, UK: Heinemann.

Oluseun, A., & Oluwatoyin, A. (2008). *TOTAL QUALITY MANAGEMENT A Test of the Effect of TQM on Performance and Stakeholder Satisfaction.*

Ooi, K.-B., Arumugam, V., Teh, P.-L. and Chong, A., Y.-L. (2008). TQM practices and its association with production workers. *Industrial Management and Data Systems.*, Vol. 108, No. 7, pp. 909-927.

Pignanelli, A., & Csillag, J. M. (2008). The Impact of Quality Management on Profitability: An Empirical Study. *Journal of Operations and Supply Chain Management*, 1(1), pp.66-77,.

Porter, L. J., & Tanner, S. J. (1996). *Assessing Business Excellence: A Guide to Self-assessment.* Oxford: Butter-worth-Heinemann.

Prajogo, D., & Brown, A. (2004). The relationship between TQM practices and quality performance and the role of formal TQM programs: An Australian empirical study. *Quality Management Journal*, Vol. 11, pp. 31–43.

Punniyamoorthy, M., & Murali, M. R. (2008). Balanced score for the balanced scorecard: a benchmarking tool. *Benchmarking: An International Journal*, Vol. 15 No. 4, pp. 420-43.

Reed, J. H., & Tripathi, N. D. (2014). *Net Neutrality and Technical Challenges of Mobile Broadband Networks.*

Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring Organizational Performance: Towards Methodological Best Practice. *Journal of Management*, Vol.35, No.3, pp.718-804 .

Sadikoglu, E., & Zehir, C. (2010). Investigating the effects of innovation and employee performance on the relationship between TQM practices and firm performance: an empirical study of Turkish firms. *International Journal of Production Economics*, Vol.127, pp. 13-26.

Sajjad, F., & Amjad, S. (2012). Role of benchmarking in total quality management: Case of telecom services sector of Pakistan. *Business Management Dynamics*, Vol.1, No.8, pp.34-44.

Santos-Vijande, M. L., & Alvarez-Gonzalez, L. I. (2007). TQM and firms performance: An EFQM excellence model - research based survey. *Int.*

Journal of Business Science and Applied Management, Volume 2, Issue 2, P33.

Sashkin, M., & Kiser, K. J. (1993). *Total quality management.* San Francisco: Berett-Koehler.

Shewhart, W. A. (1931). *Economic control of quality of manufactured product.* New York: Van Nostrand.

Shewhart, W. A. (1986). *Statistical method from the viewpoint of quality control.* Mineola, NY: Dover Publications.

Sinclair, D., & Zairi, M. (2000). Performance measurement: a critical analysis of the literature with respect to total quality management. *International Journal of Management Review,* Vol 2 No. 2, pp. 145-68.

Sinclair, D., & Zairi, M. (2001). An empirical study ofkey elements of total quality-based performance measurement systems: a case study approach in service industry. *Total Quality Management*, Vol. 12 No. 4, pp. 535-50.

Talib, F., Rahman, Z., & Qureshi, M. N. (2010). The relationship between total quality management and quality performance in the service industry:a theoretical model. *International Journal of Business, Management and Social Sciences*, Vol. 1, No. 1, 2010, pp. 113-128.

Tenner, A. R., & DeToro, I. J. (1986). *Total quality management: Three steps to continuous improvement.* Reading, MA: Addison-Wesley.

Thor, C., & Jarret, J. (1999). Benchmarking and reengineering: alternatives or partners? *International Journal of Technology Management*, Vol. 17 No. 7/8, pp. 786-96.

Tummala, V. R., & Tang, C. (1994). Strategic quality management,Malcolm Baldrige and European quality awards and ISO 9000 certification; Core concepts and comparative analysis. *IJQRM*, 11.

Waburi, N. (2009). *The Contribution of mobile phones to the Kenyan Economy.* Nairobi.

Waldman, D. A. (1994). The Contributions of Total Quality Management To a Theory of Work Performance. *Academy of Management Review*, Vol. 19 No. 3 pp. 510-536.

Walton, M. (1986). *The Deming management method.* Newyork: Perigee Books.

Woodruff, R. (1997). Customer Value: The next Source for Competitive Advantage. *Journal of The Academy Marketing Science*, Vol. 25, No. 2 pp 139-154.

York, K. M., & Miree, C. E. (2004). Causation or Covariation: An Empirical Re-Examination of the Link Between TQM and Financial Performance. *Journal of Operations Management*, Vol. 22, No. 3, pp. 291-311.

Yunoh, M. N., & Ali, K. A. (2015). Total Quality Management Approach for Malaysian SMEs: Conceptual Framework. *International Journal of Business and Social Science*, Vol. 6, No. 1;.

Zakuan, N.M; Yusof, S.M.; Laosirihongthong, T; Shaharoun, A.M. (2010). Proposed relationship of TQM and organizational performance using structured equation modeling. *Total Quality Management*, Vol.21, No.2, pp. 185-203.

Zineldin, M., & Fonsson, P. (2000). An examination of the main factors affecting trust/commitment in supplier dealer relationships:an empirical study of the Swedish wood industry. *The TQM Magazine*, Vol.12, No.4, pp. 245-265.

APPENDICES

Appendix A QUESTIONNAIRE and TABLES

SECTION - A - GENERAL INFORMATION

1. Company Name _____
2. Headquarters location_____
3. Gender: Male ❑ Female ❑
4. Your position in the Management. (Tick whichever is applicable).

   Operational ❑ Middle Level ❑ Senior ❑
5. Your experience in this organization. (Tick whichever is applicable).

   Below 5 Years ❑ 5 – 10 Years ❑ > 10 Years ❑
6. Education: (Indicate the highest academic qualification)_____

   Diploma ❑ Bachelors ❑ Masters ❑ PhD ❑

	SECTION - B - Strategic quality management initiatives					
	Please circle the appropriate value	Very Great Extent 5 (VGE)	Great Extent 4 (GE)	Medium Extent 3 (ME)	Small Extent 2 (SE)	Very Small Extent 1 (VSE)
7. To what extent has your firm implemented the following visionary leadership initiatives in an effort to improve its performance; use the scale below?						

	Our organization's top management takes responsibility for quality and has objectives for quality performance	5	4	3	2	1
	Our company's top management provides personal leadership for quality products and quality improvement	5	4	3	2	1
	Our company's top management is evaluated for quality performance	5	4	3	2	1
	Department heads within our company participate in the quality improvement process	5	4	3	2	1
	Quality issues are reviewed in our company's management meetings	5	4	3	2	1
	Our company's top management has objectives for quality performance	5	4	3	2	1
8. To what extent has your firm implemented the following employee involvement initiatives in an effort to improve its performance; use the scale below?						
	Our company forms teams to solve problems	5	4	3	2	1
	Our company gives feedback to employees on their quality performance.	5	4	3	2	1

	Our employees are recognized for superior quality improvement	5	4	3	2	1
	Non-supervisory employees are involved in quality decisions.	5	4	3	2	1
	Supervisors encourage the persons who work for them to work as a team	5	4	3	2	1
9. To what extent has your firm implemented the following continuous quality improvement and six-sigma initiatives in an effort to improve its performance; use the scale below?						
	Continuous quality improvement is important goal of this organization.	5	4	3	2	1
	We employ a black/green belt role structure (or equivalent structure) for continuous improvement	5	4	3	2	1
	We use a black/green belt role structure (or equivalent structure) to prepare and deploy individual employees for continuous improvement programs	5	4	3	2	1
	In our company, members of a quality improvement team have their roles and responsibilities specifically identified.	5	4	3	2	1
	The black/green belt role structure (or equivalent structure) helps our	5	4	3	2	1

	company to recognize the depth of employees' training and experience					
	In our company, an employee's role in the black/green structure (or equivalent structure) is considered when making compensation and promotion decisions	5	4	3	2	1
	In our firm, continuous improvement projects are conducted by following a formalized procedure (such as DMAIC—Define, Measure, Analyze, Improve and Control)	5	4	3	2	1
	All improvement projects are reviewed regularly during the process	5	4	3	2	1
	We keep records about how each continuous improvement project is conducted	5	4	3	2	1
	In our firm, the product design process follows a formalized procedure	5	4	3	2	1
10. To what extent has your firm implemented the following supplier involvement initiatives in an effort to improve its performance; use the scale below?						
	Our suppliers are selected based on quality rather than price	5	4	3	2	1
	We strive to establish long-term relationships with suppliers	5	4	3	2	1

	We rely on a small number of high quality suppliers	5	4	3	2	1
	The organization provides education and clear specifications are provided to its suppliers.	5	4	3	2	1
	Our suppliers are actively involved in our product design/redesign process	5	4	3	2	1
	Our suppliers are evaluated according to quality, delivery performance, and price, in that order	5	4	3	2	1
	Our company has a thorough supplier rating system	5	4	3	2	1
	Our suppliers are involved in our quality training	5	4	3	2	1
	We provide technical assistance to our suppliers	5	4	3	2	1
11. To what extent has your firm implemented the following benchmarking initiatives in an effort to improve its performance; use the scale below?						
	Our firm leverages on best available technology to deliver quality products compared to our competitors.	5	4	3	2	1
	Our company uses benchmarking as a tool to gauge performance in the industry	5	4	3	2	1

	Our company makes comparison with other players in the industry to sustain competitiveness	5	4	3	2	1
	We consider benchmarking as a catalyst for change	5	4	3	2	1
12. To what extent has your firm implemented the following quality training initiatives in an effort to improve its performance; use the scale below?						
	Quality-related training is given to employees throughout the organization, including managers and supervisors.	5	4	3	2	1
	Training is given in the basic statistical techniques (such as histogram and control charts) in our organization.	5	4	3	2	1
	Training is given in the ‘‘total quality concept’’ (i.e., philosophy of company-wide responsibility for quality) in our company	5	4	3	2	1
13. To what extent has your firm implemented the following customer focus initiatives in an effort to improve its performance; use the scale below?						
	Our company uses customer requirements as the basis for quality	5	4	3	2	1
	We frequently are in close contact with our customers	5	4	3	2	1

	Our customers give us feedback on quality and delivery performance	5	4	3	2	1
	Our employees know who our customers are	5	4	3	2	1
	Our customers visit our offices	5	4	3	2	1
	Our company measures our external customers' satisfaction	5	4	3	2	1

	SECTION - C - Organizational performance					
14. To what extent has your firm achieved the following performances after introduction of strategic quality management initiatives; use the scale below?						
	Our firm has realized increased in profitability due to quality of our products and services with adoption of quality management	5	4	3	2	1
	Our company's operating income has grown	5	4	3	2	1
	Our company's profits have grown	5	4	3	2	1
	Return on assets of our company has increased	5	4	3	2	1
	In general, our firm has recorded fewer network disruptions due to	5	4	3	2	1

	adoption of quality management initiatives					
	The quality of our company's products and services has been improved since introduction of quality management	5	4	3	2	1
	The delivery of our products and services has been improved	5	4	3	2	1
	Customer satisfaction with the quality of our products and services has increased	5	4	3	2	1
	Our company's sales have grown with adoption of quality management	5	4	3	2	1
	Our market share has grown with adoption of quality management	5	4	3	2	1

15. Please provide us with the information in the table below for the purposes of computing organizational performance

Metrics	Financial year 2012	Financial year 2013	Financial year 2014
Revenue (KES)			
EBIDTA (KES)			
Share price (KES)			
Number of network outages per year (Number)			

Average number of customer churn per year (Number)			
Average number of new subscribers per year (Number)			
Minutes of use per year (Number)			

Table A. 1 Financial Performance Indicators - Source www.ca.go.ke: Customer Returns and Safaricom Website (www.safaricom.co.ke)

Safaricom			
Metrics	**Financial year 2012**	**Financial year 2013**	**Financial year 2014**
Revenue (KES)	107,000,000,000.00	124,290,000,000.00	144,670,000,000.00
EBIDTA (KES)	37,500,000,000.00	49,240,000,000.00	60,950,000,000.00
Market Share	67%	77.50%	68.00%
Average number of new subscribers per year (Number)	1,126,322	1,139,055	688,619
Minutes of use per year (Number)	21,753,029,214	24,663,027,792	24,880,279,284
Airtel Kenya			
Market Share	15%	13%	16.00%
Average number of new subscribers per year (Number)	932,315.00	304,659.00	(595,030.00)

Minutes of use per year (Number)	2,930,054,951.00	3,569,818,888.00	5,183,625,480.00
Telkom Kenya			
Market Share	10%	8.60%	8%
Average number of new subscribers per year (Number)	(404,952.00)	(990,304.00)	402,576.00
Minutes of use per year (Number)	2,066,666,495.00	835,728,812.00	1,834,410,112.00

Appendix B Acronyms

1. BM – Benchmarking
2. CDMA - Code Division Multiple Access
3. CF – Customer focus
4. CQI – Continuous quality improvement
5. DOE - domains of excellence
6. EI – Employ involvement
7. GSM - Global System for Mobile Communications
8. IP - Innovation Performance
9. ISO - International Standards Organization
10. LTE - Long Term Evolution
11. MBNQA - Malcolm Baldrige National Quality Award
12. MCSP – Mobile communications service providers
13. MVNO - Mobile Virtual Network Operator
14. OP – Organizational performance
15. PDCA - Plan Do Check Act
16. QP - Quality performance
17. QT – Quality training
18. SCM – Supply chain management

19. SI – Supplier improvement

20. SQM – Strategic quality management

21. TQM – Total quality management

22. UMTS - Universal Mobile Telecommunications System

23. VAS - Value Added Services

24. VL – Visionary leadership

25. VoLTE - Voice over Long Term Evolution

26. WCMDA - Wide Band Code Division Multiple Access