

Strategic Quality Management Initiatives and Performance of Mobile Communications Service Providers in Kenya

William J. Baraza*

* Management Science, University of Nairobi, Kenya.
Corresponding Author: William J. Baraza*

Abstract: 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 not¹³. Organizations need to evaluate adoption strategic quality management since this is one way of improving on their strength and reducing their weaknesses. This paper used primary data from three top telecommunication companies in Kenya (Safaricom, Airtel, and Telkom) to ascertain the relationship amid adoption of SQM initiatives and performance of firms. The researcher noted that if strategic quality management is successfully adopted, it can greatly improve the performance of a firm. 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 users⁹. This is besides the competitive environment in which mobile operators work.

Keywords: Mobile Communication Service Providers, Organizational Performance, Strategic Quality Management.

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I. Introduction

Strategic Quality Management (SQM) originated from the manufacturing where quality control measures were put in place to reduce wastages and defects on the manufactured products. However, SQM has since been adopted in the service sector and government and not only focuses on products but organizations as a whole with an aim of improving the quality of services and products offered³. SQM is a shift in thinking and the way firms are operated to have an overall positive effect on the individual employee productivity and the overall financial bottom-line of the firm in question⁹. Strategic quality management is hinged on the precepts of total quality management (TQM); whose main focus is on enabling firms achieve their objectives effectively and efficiently and attain a competitive edge³. SQM initiatives are diverse and some of them include benchmarking, just-in-time (JIT), total quality management, continuous improvement, and supply chain management (SCM)¹². These initiatives, if well managed, could result in augmented organizational performance in terms of customer and employee satisfaction, efficiency in operations, and profitability¹⁴.

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), wirelessly⁸. 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). In early 2015 a fourth operator called Equitel was licensed under the mobile virtual network operator (MVNO) scheme.

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 growth⁸. The dynamic status of MCSPs network due to continuous upgrades from one revision or generation to the next¹³. 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 profitability⁷.

SQM initiatives' roles in MCSP have become key contributors and enablers of economic growth in both developed and developing countries¹. Khan (2009) studied the connection amid quality management and productivity of MCSP in Pakistan, which has different dynamics and more developed than in Kenya⁶. Another research carried out in the telecoms sector in Iran by Nekouezadeh and Esmaeili (2013) concluded that total quality management aspects affect the quality performance, innovation and organizational performance⁷. The

main objective of this paper was to ascertain the relationship amid QSM initiatives and organizational performance among MCSP in Kenya.

A conceptual framework that portrays the association between SQM initiatives and organizational performance is as shown below. The successful implementation of the framework must generate impressive indicators such as customer and employee satisfaction and profitability.

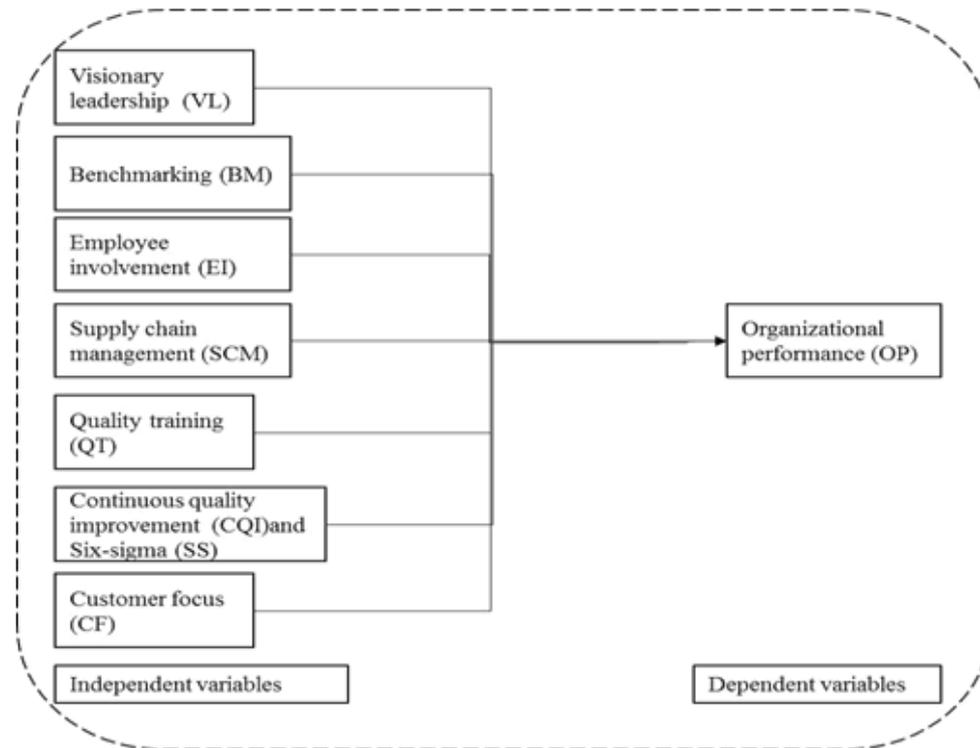


Fig 1: Conceptual Framework.

II. Material and Methods

Research Design

This study used a descriptive cross-sectional survey research design to address the research question on the relationship between strategic quality management initiatives and performance of MCSP in Kenya. Three MCSP were used in the study; 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 that operates as a mobile virtual network operator (MVNO) by sharing core network infrastructure with Airtel Kenya. For the purposes of this study Equitel was excluded.

Population and Sample

All managers in the three MCSPs was used as target population. The total number of the employees working with these operators was about six thousand as of 2015. Random probability sampling was used with a sample size of fifty managers consisting of top management, middle management and operational managers. These managers were drawn from various departments and divisions in the organizations including information technology, engineering, procurement, human resources, finance, sales, operations and customer services.

Table 2.1 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
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Data collection was done using questionnaires. Two hundred questionnaires were sent to senior or strategic managers, middle level managers and operational managers, equally among the three operators. The questionnaires used were adopted from that 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

Data Analysis

Responses on questionnaires were edited for completeness and consistency before processing. Descriptive statistics and regression analysis were used to determine the association between SQM initiatives and organizational performance. Factor analysis was used to validate the research instruments constructs. The presentation of the data was done by use of tables. The analytical model used to ascertain the connection between independent and dependent variables was;

$$.y = a_0 + a_1x_1 + a_2x_2 + a_3x_3 + \dots + a_nx_n + e$$

Where

y = dependent variable

x₁, x₂, x₃, ... x_n = independent variables

a₁, a₂, a₃, ... a_n = regression coefficients

e = error – other factors affecting performance apart from SQM

a₀ = constant value when dependent variables

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.

III. Results

The study had over 80% response rate to the questionnaires sent out to respondents. Among the respondents 64.2% were 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 respond to the questionnaire, while other worked at the firms for less than five years representing 24.5% of the respondents. Those who have been with the firms for over ten years were 22.6% of the total number of respondents. The survey also revealed that none of the organizations had 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.

When asked on whether adoption of strategic quality initiatives by mobile operators in Kenya impact the mobile operators’ organization performance, various indicators based on the five-point Likert scale were used (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 3.1 below indicating the mean scores and the standard deviations of each variable.

Table 3. 1 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	4.868	.4402

	improved since introduction of quality management		
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 quality management	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 the 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 qualitymanagement 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' services positively

changed since introduction of quality management (4.868). The provision of services by MCSPs has been improved (4.868) while at the same time customer satisfaction with the quality of the operator’s 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 mean score of (4.51). 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 3.2 below.

Table 3.2 Summary Output

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 0.734 in table 3.2 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 3.3 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 3.3 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.

Respondents were requested to input revenues, EBIT, 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 results 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 turn positively impacts the general organizational performance.

IV. Conclusion and Recommendations

The paper sought to determine a link between strategic quality management initiatives and organizational performance in Kenya. The researcher noted that respondents agree that the adoption of SQM initiatives positively impact the performance of the mobile communications service providers⁶. One limitation

of the study was that it did not cover the recently formed mobile communications service provider, Equittel. 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. 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 services¹⁵. Regulations can be devised to guide sustainable adoption of SQM initiatives besides establishing appropriate monitoring regimes.

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Appendix 1:

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

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