Factors Affecting Knowledge Management Implementation In Telecommunication Industry: A Case Study Of Safaricom Limited

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Abstract

Knowledge management implementation is the process of fulfilling knowledge management goals, hence achieving the organisation's competitive advantage. Past studies on knowledge management in Kenya give an overview of knowledge management in the country. However, no empirical study has been done to establish factors affecting knowledge management implementation. Therefore this study establishes the factors that affect knowledge management implementation in telecommunication industry: a case study of Safaricom limited. A descriptive research design was adopted and a case study of Safaricom limited was conducted. The instrument for data collection was a questionnaire. The study found that information technology, change acceptance and top management support greatly affect knowledge management implementation. It is recommended that the organisation should make deliberate efforts to improve staff participation in programs like knowledge management. Employees should be recognised and rewarded for their ideas (new knowledge). In order to deepen and consolidated the creation, sharing and use of knowledge more IT channels like video conference, telephone conference, online discussion forum should be adopted. Organisations should invest in more information technology infrastructures and people.

Key Words: Knowledge, Knowledge management, Knowledge management implementation, Information technology, Change acceptance and Top management support.

1 Introduction
1.1 Background of the Study

The terms knowledge workers, knowledge economies and knowledge societies are common phrases in today's world. This is an indication that knowledge is the currency with which our world runs. Knowledge management (KM) is the engine that drives businesses and other organisations in the modern day competitive world. The fundamental issues of knowledge creation, knowledge sharing or organizational learning are the key drivers behind Toyota's remarkable success [1]. This is evident on Kenyan roads 'the car in front of you is always a Toyota.'

Knowledge management is relatively a new subject and most of its theories, concepts and practices are going through massive changes world over. Therefore knowledge management is still in its formative stages. This is exhibited by the numerous definitions that exist about the subject. According to [2] knowledge management is about capturing, creating, distilling, sharing and using know-how. They further state that know-how includes tacit and explicit knowledge. Know-how is used as short hand for Know-what, Know-who, Know-why and Know-when. [3] Knowledge management is the process of systematically gathering knowledge, making it widely available throughout the organisation. A utilitarian description of knowledge management is provided by Skyme who states that it is the flow of knowledge that is important [4].

Despite the fact that knowledge management is undergoing the crystallization process, it is well received by many organizations, especially in the developed countries. A survey of 200 large firms in the United States of America revealed that 80% of the corporations had knowledge initiatives [5]. This gives an indication of how knowledge management is a vital undertaking by any organization that exists in this century.

Safaricom Limited

Safaricom is a telecommunication company. It provides comprehensive range of mobile telecommunication services under one roof: voice, messaging, data and fixed broadband on a variety of platform. The Company's revenue for the financial year that ended in September 2012 was 107 billion and net profit of 12.63 billion. The company Market capitalization is 164 billion [6]. Safaricom is one of

the leading integrated communications companies in Africa with over 19.1 million customers. It is a market leader in Kenya with 67% of market share. The company has won many awards locally and internationally. Some of the awards are: UN-Habitat Business Award, Best Business Practices -2009, Best Mobile Transfer Service -2010 and Africa Com Award – South Africa -2011[7].

Safaricom and Knowledge Management

Safaricom was the first telecommunication company in the market to launch online customer support [7]. The online customer support is backed by the knowledge that the organisation has accumulated over the years. In the year 2011, Safaricom kicked off a project to have a centralized and commercial off-the-shelf product for knowledge management that could span across divisions. The selected solution was EGain Knowledge Management System that allows for centralized knowledge data to be shared across division and a selected section of the same knowledge availed to customers on self-service portal. Through knowledge management, Safaricom has developed what it calls single point of truth to ensure that the customer gets consistent information irrespective of the channel used. Knowledge management has improved customer satisfaction. It is with this background that this research seeks to investigate the factors that affect knowledge management implementation in telecommunication industry: a case study of Safaricom Ltd.

1.2 Statement of Problem

Numerous organisations internationally have been attracted to the possible benefits of knowledge management hence they have implemented knowledge management projects [1, 2, 8]. Despite the fact that knowledge management drives the developed countries' economies, Africa has not embraced knowledge management with seriousness it deserves [9]. Knowledge management in East Africa is largely informal; most organisations have not formally acknowledged the knowledge management initiatives [10].

Previous writers have noted that successful implementation of knowledge management is possible if several factors that affect knowledge management implementation are carefully considered by the implementing organisations. Information technology facilitates knowledge management, from knowledge creation to knowledge sharing [11]. Change acceptance promotes knowledge management [12]. Top management support is essential in implementing a knowledge management system [13].

However, no empirical research has been conducted in Kenya particularly within the telecommunication industry to establish whether the stated factors have a substantial bearing on knowledge management implementation in the telecommunication industry. This study therefore is aims at establishing the factors affect knowledge management implementation in telecommunication industry: a case study of Safaricom Ltd.

1.3 Specific Objectives

1. To investigate whether information technology affects knowledge management implementation in Safaricom Ltd.
2. To find out whether change acceptance affects knowledge management implementation in Safaricom Ltd.
3. To establish whether top management support affects knowledge management implementation in Safaricom Ltd.

2 Literature Review
2.1 Conceptual Framework/ Theoretical Literature Review

Technology makes knowledge sharing easier by bridging the distance between the knowledge sharers and those that need the knowledge. [4]; organizations should make plans that will encourage change acceptance before and during implementation of knowledge management within the organization [14]. Knowledge management succeeds when the top leaders are committed and supportive of the whole idea of knowledge management [15].
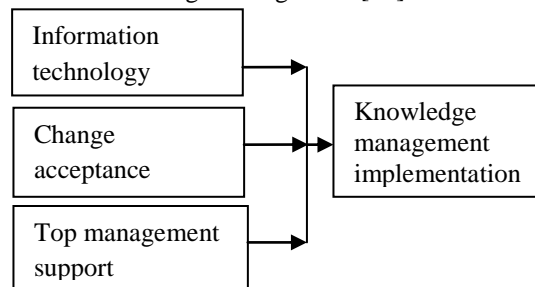
Independent Variables   Dependent Variable

Figure 2.1: Conceptual Framework of the study

The tremendous growth in knowledge management has led to growth of knowledge management theories and models. One of the most quoted theories is SECI theory. This theory was cited 1093 times in the period between 1994 and 2004 [16]. The theory is made up predominately of three components; the components are the SECI, Ba and Knowledge Asset.

The three components are interconnected by Leadership [17].

SECI Model

According [18] knowledge creation undergoes four stages. Socialisation is the first stage of SECI, it takes place when individuals meet face to face; the one with the tacit knowledge passes it the other individual(s). The second stage is externalisation. This is when tacit knowledge is converted to explicit knowledge. This is achieved through dialogue and reflections among individuals. The third stage is combination. This is when explicit knowledge is converted into explicit knowledge. It occurs when individuals: interpret, analyse various sources of explicit knowledge and come up with more systematic and relevant explicit knowledge for the organisation. The fourth stage is called internalisation. This is when explicit knowledge is converted to tacit knowledge.

Ba

Ba is Japanese word that means shared context in motion for knowledge creation. In knowledge creation, one cannot be free from context. Social, cultural and historical contexts are important for individuals; the contexts provide the basis for one to interpret information to create meanings. They further state that ba has a complex and ever-changing nature. Ba sets a boundary for interactions among individuals yet its boundary is open [17].

Knowledge Assets

Assets are firm specific resources that are indispensable to create values for the firm. Knowledge assets are both inputs and outputs of the organisation's knowledge creating activities, hence they are constantly evolving. Therefore knowledge assets are raw materials for further knowledge creation and may be shared within organisation. Knowledge assets are divided into experiential knowledge assets, conceptual knowledge assets, systemic knowledge assets and routine knowledge assets [18].

Leadership

Knowledge-creating process cannot be managed in the traditional sense of `management', which centres on controlling the flow of information. It is top management's role to articulate the knowledge vision and communicate it throughout (and outside) the company. Top managers are responsible of bringing SECI, knowledge asset and ba together in harmony [17]. In the case of ba, change acceptance is very important in the management of knowledge since context in which it is managed undergoes cost

change. Every stage of SECI can be aided by information technology [19].

2.2 Empirical Review
Information Technology

It was established that most of the respondents use technology (web, internet, telephone) to capture, share and transfer information or knowledge. The capturing, sharing and transferring of knowledge are the key processes of knowledge management. Therefore, information technology is a media that supports knowledge management [20]. Information technology is an enabling infrastructure; it facilitates knowledge flow and eliminates barriers to communication within an organization. They single out two broad categories of technologies, the collaboration technologies and the knowledge discovery technologies [21].

Change Acceptance

Change acceptance promotes knowledge management. It was noted that the nature of Non-Profit Organizations of using volunteer may hinder knowledge change acceptance because the volunteers are in the organisation for a short time hence they do not see the need of learning too much. Therefore high turnover affects the acceptance of change. [12].

Top Management Support

One of the key assets of organizations is their knowledge and top management's commitment on knowledge management. Top management commitment includes activities such as: active support to knowledge management, setting personal example, communicating company's knowledge management value, reinforcing knowledge messages, meeting with the work force and the customers, giving formal and informal recognition of knowledge management and personal training [22].

3 Research Design and Methodology
3.1 Research Design

In order to describe the factors, a descriptive design was adopted. This method was adopted because it uses the data collected to explain the effects of information technology, change acceptance and top management support on knowledge management. A case study was adopted in order to offer an in-depth investigation of the organisation under investigation.

3.2 Sample Size and Sampling Techniques

The population under study was Safaricom limited while the study population was Safaricom Call Centre- Mlolongo. The Call Centre has a population of 1447 employees, which is 38% of the total

population of Safaricom Limited. The Call Centre-Mlolongo was considered because it has the highest number of employees in a single place using the knowledge management system. The sample size was selected from the study population of 1447 employees at Mlolongo. The selection was guided by representation. Different sizes of study population have different sizes of sample. For the study population between 1000 and 1999, the proposed sample is 91 respondents. Hence this study adopted a sample size of 91 respondents [24]. It is representative. The researcher adopted both stratified random sampling and simple random sampling. Stratified random sampling was adopted because the sample is heterogeneous. Once the number of respondents is determined in each stratum then simple random sampling was used in each stratum, since stratums are homogenous.

Table 3.1 Sample Size

Categories	Population	Sample Size	Sample (%)
Managers	20	2	2.20%
Officers	115	7	7.69%
Assistants	1312	82	90.11%
Totals	**1447**	**91**	**100.00%**

The researcher collected data using questionnaires. The questionnaire was made up of open-ended questions and closed-ended questions. In order to establish whether the research instrument was consistent a pilot study was conducted to establish the reliability.

3.3 Data Processing and Analysis
The completed questionnaires that were received from the respondents were scrutinized for completeness, accuracy and consistency. Then the data was sorted and analysed through qualitative and quantitative analysis. A Statistical Package for Social Sciences (SPSS) version 17 was used to generate data arrangements. A correlation analysis was performed to establish the relation between variables.

4 Data Analysis, Interpretation and Presentation
4.1 Response Rate
Out of the sample of 91 respondents, 70 respondents returned the filled questionnaires. This constitutes 77% of the sample while 21 respondents did not return the questionnaires which constituents 23%. The response is high enough to be an accurate representative of the sample.

4.2 Reliability Analysis
The dependent variable and the independent variables were tested at pilot level for questionnaire reliability using Gronbach's alpha test they produced coefficients of 0.756 for information technology, 0.845 for change acceptance, 0.784 for top management support and 0.812 for KMI implying a high reliability and hence fit for usage in the main study. The results are displayed in table 4.1 below.

Table 4.1: Reliability Test

Variables	No of Items	Cronbach's alpha coefficient
Information Technology	4	0.756
Change Acceptance	4	0.845
Top Management Support	4	0.784
KMI	4	0.812

4.3 Respondents' Demographic Profile
4.3.1 Length of service
The results in figure 4.1 indicate that 68.6% of the employees have worked between 1-5 years while 24.2% have worked between the 6-10 years. Only 4.3% have worked between 11-15 years and 2.9% have worked for over 15 years. This shows that majority of the employees are young hence members of dot com generation.
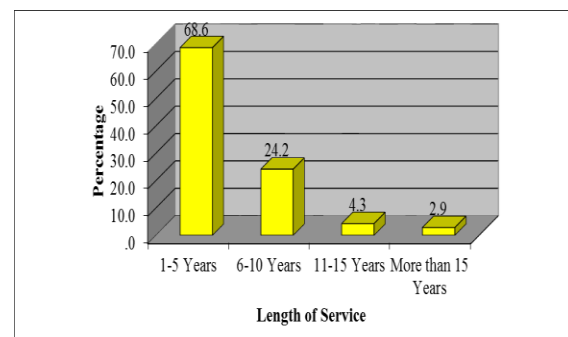

Figure 4.1: Length of Service

4.5 Information Technology
4.5.1 Website linked to other knowledge resources
The study shows that 35.8% of the respondents strongly agree that Safaricom's website is linked to useful knowledge resources. The respondents who agree that Safaricom's website is linked to useful knowledge resources are 48.6%. Those who strongly agree and those who agree are 84.4% while only 15.6 % who are either neutral or disagree. Those who agree asserted that all relevant products and services information is available to everyone's access and are

updated whenever a new product/service is introduced. In addition more information is on intranet and it allows for centralized access. They noted that website is linked to relevant self-service e-knowledge which allow easy to access to information. Majority of the respondents said that the available information is sufficient for daily operations and it is relevant to the customers' needs. Customers can access information from the website without visiting customer care.

4.5.2 Information technology and its use in knowledge management

The result in figure 4.2 shows that 20% of the respondents use information technology in acquiring of knowledge, 7.1% use information technology for knowledge storage while 20% use information technology to distribute knowledge and 52.9% of the respondents use information technology to access knowledge as shown in figure 4.5. The results of the study agree with [11] assertion that information technology facilitates knowledge management, from knowledge creation to knowledge sharing.
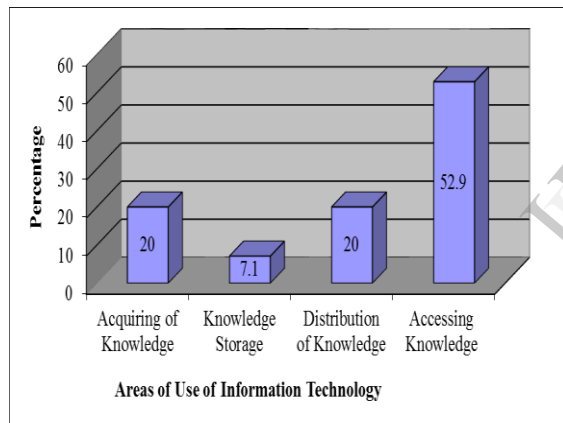

Figure 4.2: Information Technology and its' Use

The results shows that information technology is used in all the four stages of knowledge management, that is knowledge acquisition, knowledge storage, knowledge sharing and finally in accessing knowledge. The first three above experienced low percentages since the Call Centre majors in knowledge use rather than knowledge creation. However, information technology helps in getting customers feedback that is used in developing new knowledge. Also customers' records are archived for future references. Information technology allows employees to get information when and where they need it. Information technology is used in training and educating employees.

4.5.3 The frequency of technology use in knowledge management

The study shows in table 4.2 that staff email is used by 94.2% of the respondent's daily, knowledge management systems is used by 70% of the respondents daily and Facebook/twitter is used by 54.3% of the respondents daily. These three are the most used information technology channels at Safaricom Ltd. The results of the study agree with Richard that tools like Knowledge Management Portal, Customer Relationship Manager, Wiki and Social Media are essential in creation, utilisation, sharing and storage of knowledge. The knowledge management system, social media and staff emails are some of the technology channels that Safaricom may use for effective knowledge management [24].

The least used information technology channels at Safaricom are Skype, a whole 60% of the respondents have never used it, Video Conference has never been used by 72.9%, Telephone Conference has never been used by 55.7% of the respondents and Online Discussion Forum has never been used by 45.7%. The study shows that e-learning exhibits a unique trend from the other 7 channels. It is mostly used monthly at 41.4%, unlike others that are either mostly used daily or never used at all.

Table 4.2: The Frequency of Technology Use in Knowledge Management

Techn ology	Daily (%)	Week ly (%)	Month ly (%)	Year ly (%)	Never (%)
email	94.2	2.9	2.9	0	0
Skype	10	12.9	11.4	5.7	60
KMS	70	12.9	10	0	7.1
VC	0	7.1	8.6	11.4	72.9
TC	8.6	15.7	10	10	55.7
FB/ Twitter	54.3	12.9	7.1	1.4	24.3
elearn ing	17.2	18.6	41.4	7.1	15.7
Online Forum	21.4	7.1	17.2	8.6	45.7

4.6 Change Acceptance
4.6.1 The way change is handled

The respondents asserted that the organization assesses the current systems to establish if there are needs that are not met with the current systems and need to be met. The organization work with people with specialized knowledge to lead the rest in implementing the changes, employees are involved in giving their views on want needs to be done. The employees who have the institution memories are called upon give feedback on the process. The existing knowledge forms basis for the improvements

that are to be made in the organization. Communication is done before and during any change period, it is meant to prepare the staff for the changes to come in order to increase acceptance and minimize resistance. The communication is made to all staff and the supervisors are encouraged to reinforce the communication, mostly communication is done by emails.

4.6.2 Involvement of employees in change Activities

The study found out that only 8% strongly agree that employees are involved in change activities, 29% agree being involved in change processes while highest percentage among the respondents are neutral about be involved in change, that is 31%. 19% of the respondents disagree on whether they are involved in change activities and 13% strongly disagree on being involved in change activities.

Those who are going to be affected by the proposed changes are also intelligent hence there is need to involve them in the planning and execution of change [25]. The study reveals that the level of involvement at Safaricom is low, contrary to the above advice. The study reveals that employees would like be involved more in the knowledge management and any other new project. The study revealed that the respondents are involved in some initiatives and not all activities, the involvement is not consistent and the process of involvement is unstructured. They do not receive credit for the ideas generated.

4.6.3 Relationship between change acceptance and knowledge management

The study revealed in figure 4.3 that 1.4% of the respondents cannot see how change acceptance affects knowledge management while 7.1% expressed a low relationship between the two. 24.3% are neutral on the relationship between the change acceptance and knowledge management. A high percentage of 45.7% of the respondents stated there is a high relationship between change acceptance and knowledge management while 21.4% stated that there exist a very high relationship between change acceptance and knowledge management. The findings agree with [26] that the manner in which change is managed it enhances acceptability of implementation of knowledge management systems. KM achieves its objectives if it is treated as part and parcel of change management [2].

The respondents who stated that change acceptance has either a very low and low effect on knowledge management were of the view that there is no involvement of all stake holders, insufficient

information and inadequate use of social media. They stated that some projects are embraced while others are not. The rejection/resistance at times may be due lack of foresight and tight budgetary allocation on part of management while sometime it may be due to fear of new things and time taken to act.
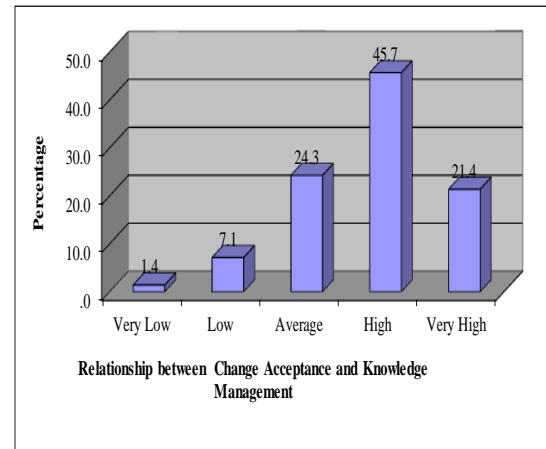

Figure 4.3: Relationship between Change Acceptance and Knowledge Management

Majority of the respondents that is 45.7% and 21.4 % who stated there is a high and very high relationship respectively between change acceptance and knowledge management because people who accept change easily accept knowledge management. The respondents stated change acceptance come before knowledge management, yet proper management of change depends on accumulated knowledge and its use. The company educates customers before implementing new changes. Knowledge management like change depends on effective communication and involvement of stakeholders at every level. The organisation has also made it clear that change must be happen since Safaricom operates in a changing business environment. The changes are necessary for better services and new programs make things simple and speed up solving customers' issues. New changes enhance efficiency.

4.6.4 Steps to increase knowledge management acceptance

According to the respondents management (top management) should craft a concrete knowledge management plan. A proper research on the impact of knowledge management on employees, customers should be conducted, the research should reveal whether the intended introductions will make work easier. The management should clearly outline the benefits of knowledge management and allow for sufficient time for the employees to understand the proposed changes. The organisation should identify

change enthusiasts and support them to bring up the change in the organisation. The views from staff should not only be collected but they should be incorporated in the knowledge management projects. The technical team should be guided by end-users before and during implementation.

4.7 Top Management Support
4.7.1 Top management's approaches of promoting knowledge management
In order to improve knowledge management utilisation the organization should invest in research and encourage research on new knowledge. The employees should be prepared before implementation in many ways which include training. The training should be flexible for example by introducing time out of work to learn new system to enhance its usage. Online course on the same should be provided. The employees should also receive prompt communication on any product change.

The respondents also proposed that the organisation may acquire the latest technology that is robust and flexible that will have a user friendly interface for effective knowledge management. Improve the speeds of KM system. The system should espouse simple procedures of archiving and retrieving information and should have proper and effective way of acquiring, sorting, sharing and storing knowledge. There should be continuous update and clean-up of outdated data. The organisation should make internet accessible to all.

4.7.2 The level at which top management has fulfilled its various roles toward knowledge management
The results show that top management performs several roles in order to entrench knowledge management in the organisation. The roles are providing finances for knowledge management, providing a clear vision for knowledge management, advocate for knowledge management, use knowledge management themselves and communicate knowledge management goals; management has scored highly in these roles. The score was 34.2%, 31.4% and 35.7%, 28.6% and 32.9% respectively. A total of about 60.7% of the respondents agreed that management has performed its role as far as knowledge management is concerned. Top management's support is needed in the following areas: in generating of ideas, planning stage, financing of the project [27].

Table 4.3: Top Management and Knowledge Management Roles

Roles	Very Low (%)	Low (%)	Average (%)	High (%)	Very High (%)
Provides finances for KM	4.3	8.6	22.9	34.2	30
Provide a clear vision for KM	4.3	12.9	21.4	31.4	30
Advocate for KM	2.9	15.7	18.6	35.7	27.1
Use KM themselves	4.3	14.2	24.3	28.6	28.6
Communicate KM goals	4.2	14.3	22.9	32.9	25.7

4.7.3: Effects of management style on knowledge management
27.1% of the respondents strongly agree that management style affect knowledge management while 55.7% agree that management style affect knowledge management, these two categories account for a total 82.8% of the responses. Neutral, disagree and strongly disagree accounts for 8.6%, 2.9% and 5.7% respectively. The respondents who strongly agree/agree gave the following reasons; the manager sets mood for all projects, they set sets implementation plans, receives and acts on feedback. If a manager is not involving, then staff involvement is affected, managers negotiate with users and offers leadership on any project. The management style determines whether new ideas are adopted and resources allocated. If a democratic management style is used it puts everyone on board. The respondents said that managements' view on knowledge management determines the decision they make and management determines processes in our daily work of new ideas/innovation. A manager who motivates and encourages employees increases the success of knowledge management implementation. A manager with good communication and people skills helps the employees understand the value of knowledge management hence he/she ensures there is buy in.

The respondents who were neutral and those who disagreed that management style affects knowledge management stated that management is not part of

the team that develops and uses the system. They argued that knowledge management is not necessarily implemented by management structure or a straight protocol. It was argued that knowledge management implementation and any other project start from downward-upward with effects felt on both sides, hence it is not only management who determine the success of a project.

4.8 Correlation Analysis

Correlation analysis was conducted to test on the relationship between the variables of the study. The results of the correlation analysis shows that knowledge management implementation is positively related with the use of information technology with a Pearson's Correlation Coefficient of $r = 0.501$ and that at a level of significance of 0.000, it is statistically significant at p value less than 0.05. The results also indicate that there is a positive correlation between the knowledge management implementation and change acceptance with a Pearson's Correlation Coefficient of $r = 0.7854$ and a level of significance of 0.000 (statistically significance). The results finally show that knowledge management implementation have a positive relation with top management support with a Pearson's Correlation Coefficient of 0.774 and 0.000 level of coefficient. The significance values tell us that the probability of the correlation being a freak is very low; hence the study shows that the relationship between the variables is real.

5. Conclusions

The study has revealed that knowledge management implementation is affected by information technology; information technology is used in all stages of knowledge management that is knowledge creation, knowledge storage, knowledge distribution and knowledge sharing. Channels through which knowledge has been managed are websites, intranets, staff emails, knowledge management system and social media.

From the study it can be concluded that change acceptance effects knowledge management implementation, organisations that embraces change positively are likely to succeed in knowledge management implementation. The organization work with people with specialized knowledge to lead the rest in implementing the changes, the existing knowledge forms basis for the improvements that are to be made in the organization. The study has revealed that the organisation has made some effort to involve employees in new project since they have the institutional memory. The involvement may be improved in case of Safaricom as the respondents have indicated.

The study has revealed that knowledge management implementation thrive if the top management supports it. Among the roles the top management play to support knowledge management implementation are provision of finances, they lead by example by using knowledge resources themselves, they provide a clear vision for knowledge management, they communicate knowledge management goals and they are the advocate for knowledge management in the organization.

5.1 Recommendations

The organisation should make deliberate effort to increase staff participation and involvement, employees at all level should be fully involved in all stages knowledge management, from planning to creation to utilisation. The junior employees interact with the clients on a daily basis hence they have a lot to offer in knowledge creation. Employees should be recognised and rewarded for their ideas (new knowledge) if implemented. In order to deepen and consolidated the creation, sharing and use of knowledge more information technology channels like video conference, telephone conference, online discussion forum, e-learning should be adopted, promoted and used as a way of life in the organisation. The organisation should invest in more information technology infrastructures and people; telecommunication industry thrive on real time information, as such information on products and service should be update promptly and internet access and speed should be excellent all the time.

5.2 Areas for Further Research

This research concentrated on establishing factors that affect knowledge management implementation, particularly in the telecommunication industry. Studies should be conducted to establish factors that affect knowledge management in other industries.

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