

Empirical Study of Knowledge Management (KM) Initiative's Adoption in Nigerian Telecommunication Industry

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Abstract

Knowledge is a valuable intangible asset for gaining competitive advantage in organizations. Through Knowledge Management (KM) practices, Nigeria Telecommunication Industry (NTI) can leverage the operation of its Call Centers (CC) agents to resolve complaints from subscribers effectively and efficiently. We observed that CC agents of NTI are not fully supported by top management to resolve complaints from subscribers promptly and effectively. Thus, this work conducted an empirical study to evaluate the extent of adoption of KM initiatives for effective service delivery by NTI. Qualitative survey method, such as questionnaire and interview was used for information gathering from four major network operators in Nigeria, namely, *Globacom* mobile service, *Airtel*, *Etisalat*, and *MTN*. Respondents' reaction was analyzed using Multiple Regression in SPSS to test stated research hypothesis on assessing the level of involvement of top management of NTI in adoption of KM initiatives, and the extent to which NTI structure supports KM practices. The study showed that NTI top management's involvement in adoption of KM initiatives is insignificant ($P=0.755>0.05$) with just 3.7% contribution as compared to the best practice of KM adoption in telecommunication industries. Hence, NTI does not provide adequate support to CC agents with respect to exploitation KM initiatives towards achieving subscribers' satisfaction, which is the global trend of business sustainability in telecommunication industry. Therefore, we propose as further work, the modeling and implementation of appropriate KM system to support CC unit of Nigeria Telecommunication Industry.

Keywords: Knowledge, Call Center Staff, Subscribers, Knowledge Management Initiatives, Nigeria Telecommunication Industry,

1. Introduction

The growing culture of mobility is compelling telecommunication companies to provide a consistently effective customer experience, regardless of time or location. An integrated contact centre can help support service providers goals by increasing customer satisfaction and decreasing operational cost. There is a push towards an innovative customer experience by providing value added services and making customer touch points more uniform and transparent. This can be accomplished by optimizing contact center operations and

implementing integrated customer facing solution.

Organization competing for the same customers with essentially the same products have differing levels of success, due to a wide variety of factors. Published statistics indicate, for example that 85% of business leaders propose that differentiation by price, products and services is no longer a sustainable business strategy. Customer experience is the new battle ground. Certain departments such as call centers, research and development departments should be given more attention, in terms of their exposure to knowledge available within the organization that will aid their professional

practices, because apart from the portals through which new knowledge can be acquired by the companies which come in form of views, theory, ideas, principles and fact, most especially call center staff are the first point of contact to the clients. And their operations and professional practices must be in tune with the vision, mission, goals and objectives of the organization.

Mobile service providers focus their vision to their call centre as a non-profit centre comparing with other internal departments. Non-profit centre (also known as a cost centre) is an internal department within an organization that increases the operational costs without contributing directly in generating revenue of such organization e.g. Customer service call centre and research and development departments.

This work has its focus on how Knowledge Management approach can be used to improve the operations of customer service department in Telecommunication Industries for improved customers loyalty and satisfactions. Invariably, the work provides a platform to improve organizations revenue, sustainable competitive advantage and continuous existence. Customer Service Centers are the most prevalent ways through which organizations communicate with their customers. It provides primary link between customer and organization [1].

2. Data, Information, Knowledge

Knowledge Management (KM) is an integral part of organization by which managements make important business decisions and proffer solutions to different growth threatening challenge that may cause organizations to loose focus on providing a high quality output. To properly employ KM initiatives, organizations must differentiate between data, information and knowledge.

In [2], data is described as a set of discrete, objective facts about events and objects. Data become information when sorted, analyzed, graphs, or tables. Knowledge is defined as, “a type or degree of understanding that exists at a point of time” [3]. In [4], knowledge is referred to as facts with its attributed meaning, where meaning is a function of an observation, learning, experience, and understanding of a reality in a particular situation or context at a specific period of time by an individual. The assertion made is that knowledge is inseparable from individuals and it is reflected in the role designated to them. Specifically, knowledge is categorized as explicit and tacit. Figure 1 depicts the major classes of knowledge. Explicit knowledge could be expressed in form of theoretical and practical experience. It could be readily transmitted across individuals formally and systematically. On the other hand, tacit knowledge is in form of skill embedded in the mind or head of individuals and in a culture (regional, organizational or social culture).

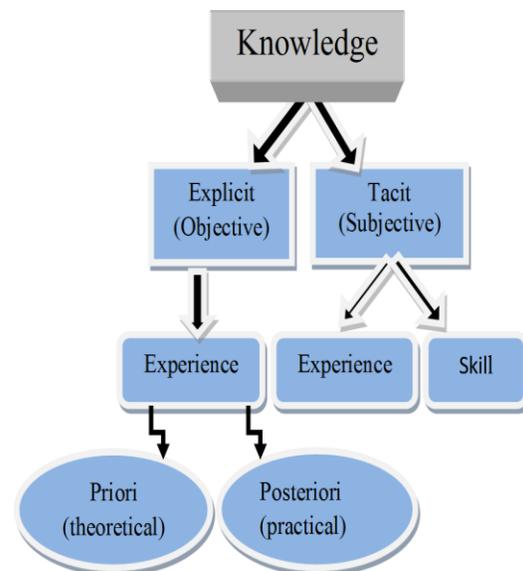


Figure 1: Classes of knowledge [4]

3. Knowledge Management

Knowledge Management (KM) comprises a range of strategies and practices used in an organization to identify, create, represent, distribute, and enable adoption of insights and experiences. Such insights and experiences comprise knowledge, either embodied in individuals or embedded in organizational processes or practices. It is the collection of processes that govern the creation, dissemination, and utilization of knowledge. In [5] it is stated that “Knowledge Management includes business intelligence, collaboration, distributed learning, knowledge discovery, knowledge mapping, opportunity generation, as well as security”. KM is the process of gathering, managing and sharing employees' knowledge capital of the organization.

KM is not only about technology, but it is also about understanding how the people in an organization work, and share experience.

4. Review of Related Works

Some existing KM systems are reviewed in this section.

An investigation on significant issues to be considered for the implementation of KM in mobile telecommunication industry was reported in [6]. Qualitative research with multiple case study approach was applied to capture knowledge from four telecommunication operators through interview. The significant issues are related to executive support, information technology, continuous activities, implementer's attitude, incentive, budget and branding approach. The work recommended that practitioners or planners could use these approaches as an intensive guideline on conducting a KM project, especially in mobile telecommunication industry or large enterprises. The focus of the work is rather on investigation and recommendation for KM implementation in telecommunication. Though its goal is similar to our work, we address the rate of

adoption of KM initiatives, and especially for customer care unit of the industry.

The role of leadership in Knowledge Management in academic libraries, and the importance of KM in decision making were presented in [7]. Also, a framework for the desired leadership competencies for a library manager was provided. The motivation was that library, being a learning organization should provide a strong leadership in KM since the most important mission is to expand the access of knowledge for their users. For a way forward, the author designed a framework for desired leadership in an academic library, [7] advocates for transformational leadership which stimulates followers to view problems in new ways and help to develop to their fullest potential and thus enhance creativity of followers. And that through transformational leadership, employees can be engaged in KM and developing such an environment where knowledge sharing between staff members is supported. Also, attention is pointed to the fact that good relationship between the top management and library knowledge leader is very important. The emphasis on involvement of leadership in successful implementation of KM indicates a similar target which our work culminates to.

5. RESEARCH METHODOLOGY

This section of the paper discusses the approach adopted in carrying out this research work. It describes the tools and techniques used for information gathering and as well the analysis of the responses from the respondent, and also points out the rationale behind the adoption of the methods, tools and technique.

Since the mode of this research study is investigative in nature, and would make use of natural settings (Telecoms Industries) as case study. Therefore, qualitative research study was used for this research work. There are three kinds of survey methods, namely, Questionnaires, telephone interviews, and personal interviews.

A field survey of the case study was carried out for the purpose of information gathering.

5.1 RESEARCH STRATEGIES

The following section highlights the strategies for each phase of the research work.

The field survey made use of questionnaires, personal interviews and as well telephone interview for information gathering. The field survey involved more than one telecom industry for clarification of purpose.

Cross analysis and evaluation of knowledge management approach from different case studies was done using Multiple Regression Analysis to test the hypotheses. The preference of Multiple Regression Analytical tool to other statistical analytical tools is informed by the construct of the questionnaire. The questionnaire consists of multiple independent variables and a dependent variable. Adoption of multiple regression analysis would make the testing of correlation and contribution of the independent variables to the dependent variable possible. It allows the modeling of multiples influences on an outcome. Chi Square, which is another analytical tool, can only measure the association between the independent variables and the dependent variable.

5.2 Research Instrument

The information gathering instruments for this study are the questionnaire and interview. This is used to investigate existing KM infrastructure. This becomes imperative because investigating the existing infrastructure is the first step to take in KM life cycle as depicted in figure 2.

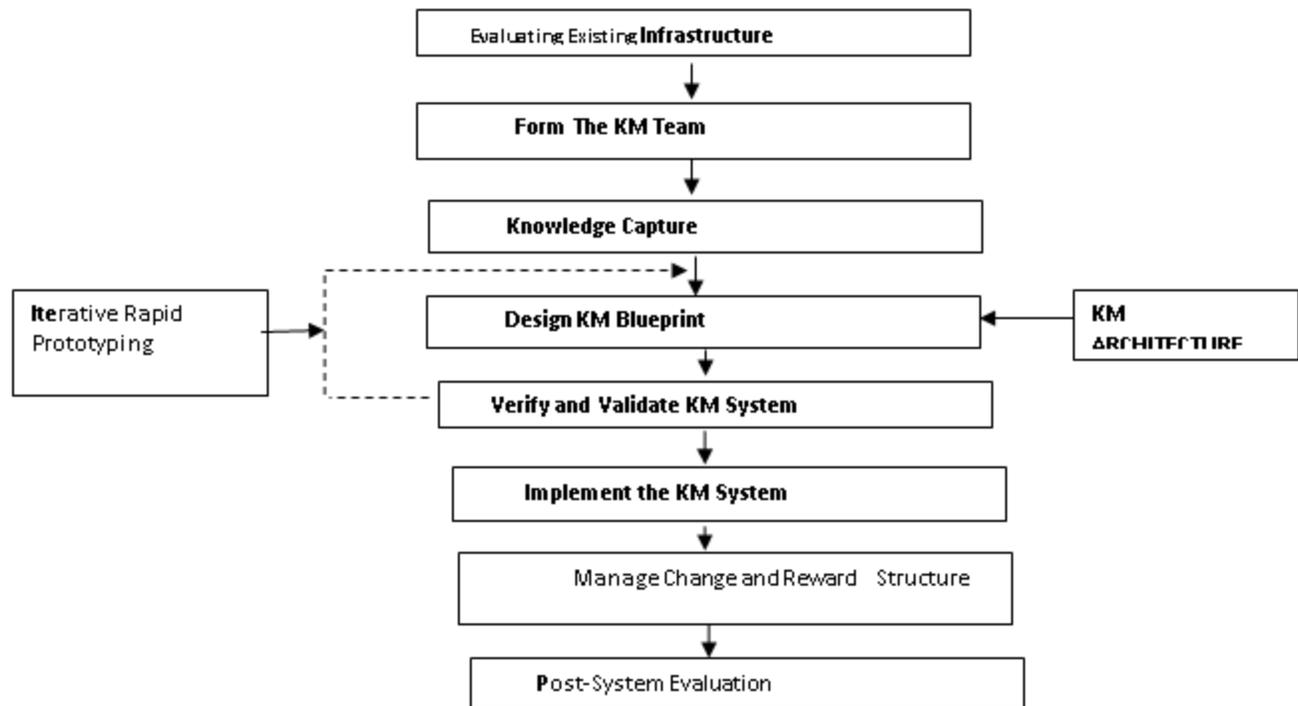


Fig. 2: Knowledge Management Life Cycle [8]

5.3 Investigation of Current Structure of Knowledge Management Initiatives

The questionnaires were administered in four major network operators in Nigeria, which include, Airtel, Etisalat, Globacom, and MTN. The total of 110 questionnaires administered with 82 responses which gives 74.54% return, the middle-level managers and operational level staff are the target. Investigating these network operators give wide view of knowledge management practices in Nigerian Telecommunication Industry. The hypothesis and the construct of the questionnaire were conceived to show the current knowledge management practices to ascertain at what level of functional hierarchical structure, knowledge management is being practiced.

Investigation Techniques

Cross analysis and evaluation of knowledge management approach from different case

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5.4 Research Hypotheses

Based on this study, that call center staff in Nigerian Telecommunication Industry are not fully supported to resolve complaints from customers in quick response time, the

following hypotheses were designed to examine the level of adoption of knowledge management in our choice of network operators as indicated in section 5.3 for this research work:

1. H₀: The corporate vision does not form the basis of business operation.
H₁: The corporate vision form the basis of business operation.
2. H₀: The level of involvement of top management in the knowledge management process is insignificant.
H₁: The level of involvement of top management in the knowledge management process is significant.
3. H₀: The top management does not encourage staff training.
H₁: The top management encourages staff training.
4. H₀: The existing organizational structure and culture does not support knowledge management practices.
H₁: The existing organizational structure and culture support knowledge management practices.
5. H₀: Information Technology does not contribute to the knowledge management practices
H₁ : Information Technology contributes to the knowledge management practices.

6. RESULTS AND DISCUSSION

This section entails the analysis of the response from the respondents of questionnaire administered in selected four major network operators. Also, it presents the discussion of our findings, that is, the deductions made from the results. The total number of 110 questionnaire were administered, and 82 responses with 74.54% were returned. This percentage is good

enough to test the hypotheses indicated previously.

6.1 Analysis of the Result

The table 1 shows the independent variables or predictors used to test the level of Knowledge Management adoption in Nigeria Telecommunication Industry. Since knowledge management practices or processes is to enhance the productivity, profitability, growth of any organization, and to gain competitive advantage, thus, each of the predictor or independent variable, that is, information technology, corporate vision dissemination, sharing culture, staff training, and of course leadership style contributions to the dependent variable (organizational performance) is looked into.

Table 1: Independent Variable Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Information Technology, Corporate vision, Culture, Staff Training, Leadership Style ^a		Enter

a. All requested variables entered.

b. Dependent Variable: Organization Performance

Table 2: Model Summary of Multiple Regression Show

Model	R	R	Adjusted	Std. Error of	Cha
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	Square	R Square	the Estimate	R Square Change	Significance F	df1	df2	P value is less than
1	.695 ^a	.482	1.84976	0.05	0.000	5	56	0.000

Table 4: Individual Independent Variable Contribution to Dependent Variable Coefficients^a

a. Predictors: (Constant), Information Technology, Corporate Vision, Staff Training, Leadership Style

Model		Unstandardized Coefficients		Standardized Coefficients
		B	Std. Error	Beta
1	(Constant)	5.126	1.852	
	Corporate vision	-.220	.075	-.336
	Culture	.162	.064	.329
	Staff Training	-.086	.111	-.106
	Leadership Style	.037	.119	.050
	Information Technology	.483	.105	.531

a. Dependent Variable: Organization Performance

Table 2 shows the Correlation Coefficient which measures the relationship between independent variable and the dependent variable. It takes value between -1 and +1, R = P = 0.6-0.9 indicates strong or significant positive relationship, R = P = 1 shows a perfect positive relationship, R = P = -1 indicates a perfect negative relationship. From Table 2, correlation coefficient R = P = 0.695, this suggests that independent variables, information technology, corporate vision dissemination, knowledge sharing culture within the organization, staff training and leadership style which are pillars of knowledge management have strong relationship with the organizational performance. These presume knowledge management pillars encapsulate knowledge management processes or activities, which include knowledge identification, creation, selection, adaptation, use, application, sharing, storage and re-use.

Table 4 shows the Correlation Coefficients Analysis, where each independent variable contribution to the overall knowledge management practices in selected telecommunication industry in Nigeria is analyzed. This individual contribution is used to test the null hypothesis.

6.2 Analysis of Individual Variable Contribution

In this section, we attempt to analyze individual correlation and contribution to the overall organization performance.

Table 3: Significant Status of Composite Contribution ANOVA^b

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	178.598	5	35.720	10.439	.000 ^a
	Residual	191.611	56	3.422		
	Total	370.210	61			

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

$$\hat{Y} = 5.126 - 0.220X_1 + 0.162X_2 - 0.086X_3 + 0.037X_4 + 0.483X_5$$

(1)

a. Predictors: (Constant), Information Technology, Corporate Vision, Culture, Staff Training, Leadership Style

b. Dependent Variable: Organization Performance

Where, X1 = Corporate Vision
X2 = Culture

X4 = Leadership Style

X5 = Information Technology

Analysis of equation 1 follows:

Table 3 shows that the overall composite contribution of the predictor variables on the dependent variable is significant as indicated by the table 1.1, P=0.000 < 0.05, P value is compared with the α , the level of

Corporate Vision: ($\beta = -0.220$, $t = -2.912$, $P = 0.008$), since $P = 0.008 < 0.05$, this indicates that the corporate vision dissemination in Nigerian Telecommunication Industry is significant, however, negative β value might

presumably suggest that the knowledge management practices and processes in Nigeria Telecommunication Industry is not in tandem with firms' corporate visions and business strategies, and as such ,non-alignment of knowledge management strategies with business strategies will produce a resultant effect of 22% drop in network operators performance .Knowledge Management practices must be used to drive business goals and objectives.

Culture: ($\beta= 0.162$, $t= 2.531$, $P= 0.014$), $P=0.014<0.05$, this indicates that the existing culture in Nigeria Telecommunication Industry is having significant contribution or strong relationship with knowledge management processes, however, β 16.2% value is an indication that the existing organizational structure does not give enough room for knowledge to be shared around among different units in the organization, most especially call centre unit. Hence, the need for the managements to re-organize the existing structure so that barriers such as difference in individual background, group interest, ambition, to knowledge sharing is overcome.

Staff Training: ($\beta= -0.086$, $t= -0.772$, $P= 0.443$), $P= 0.443>0.05$, this is an indication that an aspect of knowledge management practices has been relegated to the background. Staff training is an indices for measuring frequency of knowledge creation, the more the staff are sent for training the more new knowledge is created. Knowledge management involves two main aspects: knowledge exploration, and knowledge exploitation. This involve the identification of available and required knowledge assets and knowledge assets related process, and subsequent planning and control of actions to develop both the assets and the processes.

Leadership Style: ($\beta= 0.037$, $t= 0.314$, $P= 0.755$), $P =0.755 >0.05$, this implies that leadership support and commitment to

knowledge management processes is very insignificant, this is substantiated by its 3.7% contribution to the knowledge management content in the industry. It can therefore, be presumed that Nigerian Telecommunication Industry lack knowledge management initiatives, since knowledge management initiatives requires a strategic approach. The strategic planning and system thinking reside in the power of executive officers only.

Information Technology: ($\beta= 0.483$, $t= 4.605$, $P= 0.000$), $P= 0.000< 0.05$, information technology correlation to knowledge management is very significant, this is also substantiated by its 48.3% contribution to organizational performance. This suggests that Nigeria Telecommunication Industry lay much emphasis on technologies at the expense of other KM contributing factors, and as such, none of the network operators has been outstanding in terms of customer satisfaction which is now strategy for business sustainability in the world rather than differentiation in price, products and services, which is not, anyway, existing here in Nigeria. Every network operator is doing what others do.

Testing the Null Hypotheses

1. H_{01} : Since $P= 0.008< 0.05$, it shows that the corporate contribution is less than α , hence, H_{01} is rejected and alternative hypothesis H_1 is accepted thus, there is significant contribution of corporate vision to the knowledge management content in Nigerian Telecommunication Industry.

H_{02} : Since $P=0.014<0.05$, culture contribution is less than α ,hence, H_{02} is rejected and alternative hypothesis H_{12} accepted that there is significant contribution of organizational culture to the knowledge management.

2. H₀₃: Since $P = 0.443 > 0.05$, staff training contribution is greater than α value of 0.05, hence, the adoption H₀₃ that the contribution of staff training is insignificant.
3. H₀₄: Since $P = 0.755 > 0.05$, leadership contribution is less than α value of 0.05, hence, the adoption of null hypothesis H₀₄ that there is no significant leadership contribution to the knowledge management.
4. H₀₅: Since $P = 0.000 < 0.05$, information technology contribution is less than α , hence, H₀₅ is rejected and alternative hypothesis H₁₅ accepted that the existing information technology contribution is significant to knowledge management practices.

6.3 Discussion of the Findings

From the result analysis, the following findings have been deduced:

That the current leadership contribution to the knowledge management initiatives to support call center staff is insignificant with 3.7% contribution, as shown in table 3. From the literatures that were reviewed, it was evident that the knowledge management initiatives is a strategic approach, which requires high degree support and commitment from top management. This gives an insight, why, despite significant contribution of culture 16.2% and information technology 48.3% to the organizational performance, yet there is still inefficiency from the part of call center staff. Therefore, attempt is made to develop an appropriate knowledge management system to support call center unit of Nigerian Telecommunication Industry.

7. CONCLUSION AND RECOMMENDATIONS

From the analysis of the responses from the respondents and interview sessions with

some of the call center agents, the following deductions show the current KM practices as regard the support of call center staff in Nigerian Telecommunication Industry:

1. That the current level of adoption of KM relatively provides less adequate support to call center staff towards achieving customer satisfaction, which is now global trend of business sustainability in telecommunication industry.
2. That the existing organizational structures offers less support to call center staff as per KM with respect to knowledge sharing to resolve customer complaints without such complaint being sent to back office support.
3. That the managements are not very enthusiastic for knowledge identification and acquisition by undermining staff training on KM.
4. That the leadership support and commitment to knowledge management is relatively insufficient.
5. That the architecture of the information technology available, might have not been designed for capturing both tacit and explicit knowledge for storage and re-use.

Hence, it can therefore be concluded that the level of adoption of knowledge management initiatives in Nigerian Telecommunication Industry is relatively low.

Top management's role in adopting Knowledge Management initiatives cannot be over emphasized. For Nigerian telecommunication to leverage and manage knowledge in their domain, its leadership needs to realize the significance of knowledge management for enhancing productivity, effective, and efficient

operation of call center staff towards better customer experience, loyalty and retention. And by extension to enhance organization performance, productivity, profitability, and to gain competitive advantage. Leadership needs to identifies knowledge that are crucial to meeting corporate goals and objectives, defines requirements and conduct work- centered analysis so as to determine which organizational structure set up would best enhance knowledge sharing culture, overhauling the existing structure to make it flexible for knowledge sharing to become a natural phenomenon. Also, leadership needs to promote values and norms of knowledge identification and sharing through staff training, and imbibing culture of knowledge sharing among individuals or groups by encouraging collaboration and team work. There is need for the leadership to set up knowledge management team, and closely work with them to see that the Knowledge Management strategies are properly implemented for capturing tacit and explicit knowledge and measurement program that would monitor the performance of these strategies. We proposed as further work, the modeling and implementation of appropriate KM system based on the outcome of the conducted survey to support Customer Care unit of Nigeria Telecommunication Industry.

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