

**Evaluation of Total Quality Management (TQM) Application in the Nigerian Telecommunication Industry: A Case study of Imo NITEL Owerri**

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**ABSTRACT**

*This study is focused on the evaluation of Total Quality Management application in Nigeria. The study adopted the stratified random sampling technique in selecting one hundred and five manager level staff and learned regular customers of the organization. The instrument for data collection was questionnaire. The results show that Imo Nigeria Telecommunication (NITEL) offers average quality service to customers. The result further reveals that the application of Total Quality Management will positively affect the quality of telecommunication services of Imo NITEL. Full application of Total Quality Management will improve the quality of customer services offered by Nigerian Telecommunication industry.*

## 1. INTRODUCTION

Total Quality Management (TQM) is the term that has become popular to describe a comprehensive view of quality assurance. Total Quality Management is an integrative management concept to continuously improving the quality of goods and services delivered through the participation of all levels and functions of the organization. TQM is simply the process of building quality into goods and services from the beginning and continuously, and making quality everyone's concern and responsibility. The success of TQM depends on the genuine commitment to quality of every member of the organization (James and Williams, 1993:102).

Evaluation of Total Quality Management application in Imo Nigeria Telecommunication (NITEL) territory has become necessary especially now the company has not been meeting the quality of services required by her customers as a result of worn-out and aged equipment presently use. Telecommunications services are the main instrumental channel to the world as a global village. Information being a source of power, telecommunication provides the most private, quickest and personal information dissemination process and thus commands the most standard information flow, power and influence in co-ordinating the world as a global village. Telecommunications services offer the world quickest, easiest, most convenient, safest and simplest communication services. Through the modern telecommunications services called "conference call", the managers of multinational or global companies at various world location can hold executive management meetings or discussions at given time schedule without physical nor body contact. Much more, telecommunications services are indispensably used in the world as global market, international or national businesses.

Telecommunications services' being a highly technological oriented industry is subject to continuous service quality improvement and modernization. Evaluation of the Total Quality management application in Imo NITEL becomes necessary in view of modern variety and sophistication in telecommunications services. Improving the quality of services offered by the organization through introduction of modern telecommunications equipment gadgets, improved conditions of services offer to customers and personnel development will present the organization as TQM compliance.

The problem of Imo NITEL non-digital exchange switch system is one of the major causes of low or poor quality telecommunications services the organization offers to customers. Their over-aged and out-dated analogue exchange switch system having been subjected to too much of services and maintenance are no longer responding to steady function as specified by their makers. Out right lack of modern sophisticated telecommunication technologies in the telecommunication services of Imo NITEL jeopardies the quality of services offer to customers and results in the inconsistent telecommunication services. These inadequacies of Imo NITEL calls for this research "the evaluation of Total Quality Management application in Imo NITEL". The question this research will address is "will the adoption of Total Quality management concept positively affect the service quality of Imo NITEL Territory"? The null hypothesis analysis is, "the application of Total Quality Management concept will not positively affect the quality of telecommunications services of Imo NITEL".

## 2. MATERIALS AND METHODS

A stratified random sampling technique was used to select respondents for the study. One hundred and five respondents were selected; twenty knowledgeable manager level staff of Imo NITEL and eighty five learned regular costumers of Imo NITEL were randomly selected for the study. Questionnaire was used for data collection. Both primary and secondary data were obtained and used for the study. Data collected were analysed using simple percentages and Chi-square ( $\chi^2$ ) analyses.

### 3. RESULTS AND DISCUSSION

*Quality of Telecommunications Services Imo NITEL Offers.*

**(Question 6)**

Please rate the quality of services your organization offers to that of International Telecommunication Union (ITU) Services.

**Table 1.  
Respondent Option Table**

Responses	Total Responses	Percentage Responses
High quality Services	1	5
Average quality Services	18	90
Low quality Services	1	5
Total	20	100

**Source: Field survey November, 2000**

As is indicative on the above table, 1 or 5% of the 20 respondents rates Imo NITEL telecommunication service quality as that of International Telecommunication Union (ITU) standard; 18 or 90% rated Imo NITEL telecommunication service quality average to that of ITU. While 1 or 5% rates Imo NITEL as offering low quality service compared to that of ITU.

It is evidence from the above table that almost all the respondents agreed that the quality of services rendered by Imo NITEL is below the International Telecommunications Union Service quality standard.

**Table 2  
(question 22, 27)  
Respondents Options Table**

Responses	Managers(Staff)	Customers	Total
Yes	18 (15.43)	63 (55.57)	81
No	2 (3.2)	15 (13.76)	17
No Idea	0 (1.3)	7 (5.67)	7
Total	20	85	105

**Source: Field survey, November, 2000**

Note: (i) The figures in parenthesis represent the expected values (frequency) denoted in the chi-square equation as "ei". The expected frequency (ei) for each cell is calculated by multiplying the row total by the column total for the cell and dividing the product by the grand total. For example

$$81/1 \times 20/105 = 15.43 \text{ and } 17/1 \times 85/105 = 13.76$$

ii. The table is a 3 by 2 table thus d.f. = (r-1) (k-1) = (3-1) (2-1) = 2

Where d.f = degree of freedom. The above table will be transformed as follows for the calculation of chi-square (X<sup>2</sup>) statistic.

**Table 3: Calculation of X<sup>2</sup> Statistics for Null. Hypothesis**

Respondents	Responses	Observed frequency (oi)	Expected frequency (ei)	Deviation (oi-ei)	Deviation square (ei-oi) <sup>2</sup>	(oi-ei) <sup>2</sup> /ei
Managers	Yes	18	15.43	2.57	6.60	0.4277
	No	2	3.2	.12	1.44	0.4500
	No idea	0	1.3	.13	1.69	1.3000
Customers	Yes	63	85.57	2.57	6.60	0.1007
	No	15	13.76	1.24	1.54	0.1119
	No Idea	7	5.67	1.33	1.77	0.3122
		$\Sigma(oi)=105$	$\Sigma(ei)=104.93$	$\Sigma(oi-ei)=0.07$	$\Sigma(oi-ei)^2=19.64$	$\frac{\Sigma(Oi-ei)^2}{ei}=2.7025$

**Source: Derived from Table 2**

The analysis here is aimed at finding whether there is really a difference in opinion in the two groups of people highlighted concerning the assumption that Total quality management application will positively affect the quality of telecommunication services in Imo NITEL and to determine if such differences are significant.

From the table 3, the degree of freedom (d.f) according to Stafford (1979) is computed as follows:  $(r-1)(k-1)=(3-1)(2-1)=2$  and  $x^2 \Sigma(oi-ei)^2/ei = 2.7026$  (chi-square calculated) . Checking from  $x^2$  distribution table, we get tabulated  $x^2$  at 99% level of confidence or significance for 2 degree of freedom to be 0.0201

*Decision Rule:*

Reject Ho (Null Hypothesis) if  $x^2$  calculated is greater than  $x^2$  tabulated. Based on the calculated chi-square ( $x^2$ ) which is 2.7025 and tabulated chi-square ( $x^2$ ) of 99% confidence or significance level at 2 degree of freedom = 0.0201, the researcher, rejects the Ho (Null hypothesis) which states, “ the application of Total Quality Management will not positively affect the quality of telecommunications services of Imo NITEL”.

Thus, accept H1 (Alternative Hypothesis) which states, “that the application of Total Quality Management will positively affect the quality of telecommunications services of Imo NITEL”

From the result of the hypothesis above, the researcher accept the statement that the application of Total Quality Management will positively affect the quality of telecommunications services of Imo NITEL. This is in agreement with the statement of Smith (1998:16), which says, “Nothing attracts customers like quality”, make quality standard your bench mark always”. Kreitner (1995:110) also gave credence to that by defining Total Quality Management as creating an organizational culture committed to the continuous improvement of skills, teamwork, processes, product and service quality and customer satisfaction. Waklin (1992:52) defined Total Quality Management as “a senior management-led company-wide initiative intended to improve effectiveness and to build quality into the service delivered”.

Conclusively, application of Total Quality Management in Nigeria telecommunication sector especially Imo NITEL will improve the quality of customer services offered and thus creating customer satisfaction need.

**REFERENCES**

- [1]. Balock H.M. (1972), Social Statistics. 2<sup>nd</sup> ed. New york, Mc.craw-Hill Book Company.
- [2]. Hoek P. G. (1974), Social Statistics. 2<sup>nd</sup> ed. Macmillan Publishing Co. Inc.
- [3]. Kreitner (1995), Marketing Management Analysis Planning and Control. Prectice-Hall International Press.
- [4]. Smith S. (1998), Management Training. NITEL Journal. A House Magazine of Nigeria Telecommunication Limited. Vol. 22, June.
- [5]. Stafford L.W.T. (1979), Bussiness Mathematics. 2<sup>nd</sup> ed. Plymouth; Macdonald and Evans Ltd.
- [6]. Wakline L. (1992) Putting Quality into Practice. Stanley Thomas Publishers Ltd. Old Station Drive Leckharmpton Cheltenham, England.
- [7]. Willam J. (1993), The Management and Control of Quality. Printed and bind by West Publishing Company P.O. box 64526, St. Paul M.N. USA

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**QUESTIONNAIRE**

INSTRUCTION: Please tick (X) as appropriate in the blocks provided.

SECTION A

1. Are you in telecommunication industry (a) Yes [ ] (b) No [ ]
2. If yes, name your organization .....
3. What is your position in the organization? .....
4. What is your education field of specialization? .....

SECTION B

Exclusively for Managers

5. What scope of telecommunication services do you render to your customers?  
(a) Personal telephone services [ ]  
(b) Internet providers [ ]  
(c) All of the above [ ]
6. Please rate the quality of services your organization offers to that of International Telecommunication Union Services  
(a) High quality service [ ]  
(b) Average quality service [ ]  
(c) Low quality service [ ]
7. Please rate your organization Telecommunication Technological standard on International Telecommunication Union ITU standard.  
(a) Highly standard [ ]  
(b) Average standard [ ]  
(c) Below standard [ ]
8. Has your organization telecommunication been digitalized?  
(a) Yes [ ] (b) No [ ]
9. If no, has its non-digital switch exchange system of any effect on the nature and quality of service it offers to customers?  
(a) Yes [ ] (b) No [ ] (c) No idea [ ]
10. State the effects according to question 9.  
.....
11. In your own opinion, are your present telecommunications services satisfactory to your customers?  
  
(a) Yes [ ] (b) No [ ] (c) No idea [ ]
12. If no, state examples of your customers complaints. ....

13. Does your organization presently apply any management concept in the process of carrying out their business decision.
14. If yes, tick the management concept if it falls on below categories  
(a) Management by Objective (MBO) [ ]  
(b) Management by Results theory [ ]  
(c) Total Quality Management (TQM) [ ]  
(d) Participative Management [ ]
15. Is your organization aware of Total Quality Management Concept?  
(a) Yes [ ] (b) No [ ] (c) No idea [ ]
16. If yes, how long and how effective have your organization been in the application of TQM?  
(a) Over five years but effective practiced [ ]  
(b) Below Five years but not efficiently practiced [ ]  
(c) About two years but on specific cases [ ]
17. Has the application of TQM concept in your organization service business of any positive result?  
(a) Yes [ ] (b) No [ ] and if yes state examples.....
18. In your own opinion, does application of TQM has cost reduction effect?  
(a) Yes [ ] (b) No [ ] (c) No idea [ ]
19. If yes, state an example of a quality improved service of your organization that yielded cost reduction and revenue increment.....
20. On the average, what is the percentage of increase/decrease in your cost since the application of TQM?  
(a) Above 50% increase [ ]  
(b) Above 50% decrease [ ]  
(c) Below 50% increase [ ]  
(d) Below 50% decrease [ ]
21. On the average what is the percentage of increase/decrease in your revenue since the application of TQM.  
(a) Above 50% increase [ ]  
(b) Above 50% decrease [ ]  
(c) Below 50% increase [ ]  
(d) Below 50% decrease [ ]
22. Do you think that TQM will equally affect/improve the quality of every area of Telecommunications Services in your organization? (a) Yes [ ] (b) No [ ] (c) No idea [ ]
23. Based on question 17, rate TQM on its benefits and values if adequately applied in your organization.  
(a) High benefit value [ ]  
(b) Average benefit value [ ]

(c) No benefit value [ ]

SECTION C

(Exclusively for Imo NITEL Customers)

24. Are you a customer to Imo NITEL

(a) Yes [ ] (b) No [ ]

25. If yes, how long and what is your profession

(a) Institutional Telephone subscriber [ ]

(b) Private Telephone subscriber [ ]

(c) Commercial Telephone user [ ]

26. Please assess the quality of service you as a customer of Imo NITEL do receive (a)

Average Quality service [ ]

(b) Below average quality service [ ]

27. In your opinion, do you think Total Quality Management philosophy application in Imo NITEL will improve the quality of Telecommunication services it offers?

(a) Yes [ ] (b) No [ ] (c) No idea [ ]

28. If there is an alternative, will you perfectly abandon your patronage to Imo NITEL

(a) Yes [ ] (b) No [ ] (c) No idea [ ]

29. State the area(s) of your disappointment in the services of Imo NITEL

(a) Telephone call making [ ]

(b) Process of Telephone line subscription [ ]

(c) Subscribers line services [ ]

(d) All of the above [ ]

30. Are you aware of Total Quality Management concept as a quality improvement measure in business management.

(a) Yes [ ] (b) No [ ] (c) No idea [ ]

31. In your own opinion, will application of Total Quality Management have any cost reduction effect on Imo NITEL telecommunication services

(a) Yes [ ] (b) No [ ] (c) No idea [ ]

32. Please rate the likely benefit of Total Quality Management application Imo NITEL if adequately applied

(a) High benefit [ ]

(b) Average benefit [ ]

(c) No benefit [ ]