Alamutu et al: Proc. ICCEM (2012) 155 - 166

An evaluation of total quality management practices on business performance of the Nigerian telecommunications sector: a case study of MTN Nigeria Limited

Alamutu S.A, Hotepo O.M, Oyeobu A.J. and Nwatulegwu B.I.
Lagos State University, Department Of Business Administration and Management Technology

Abstract

This study examines the effects of The Total Quality Management practices on Business Performance of the Nigerian Telecommunications Sector. A review of literatures on TQM shows that no study has been carried out on its application in the Nigerian Telecommunication sector hence the need for this research. To assess the situation One hundred and fifty (150) questionnaires were administered to customers of MTN Limited within the Lagos environ. These customers were randomly selected from five (5) different MTN customer care centres within the five divisions of Lagos State. These divisions include Epe, Ikorodu, Lagos Island, Lagos Mainland and Badagry. Thirty (30) questionnaires were administered at each centre. Fifty (50) questionnaires were also administered to employees of MTN and a total of twenty (20) questionnaires were administered to top management in the same organizations.

The data collected were analyzed using descriptive statistics and regression analysis. Our finding revealed that 90.7% of the changes that occurred in employees' satisfaction could be traced to the policy and commitment of top management. It also shows that 69.4% of the changes in customer satisfaction could be attributed to continuous training in quality. The study recommended among other things the training of telecommunications personnel on Total Quality Management practices and the adoption of alternative renewable sources of energy like solar to address their energy problems.

***Key words**: Total Quality Management, Telecommunication industry, top management commitment, continuous training in quality, employee satisfaction, customer satisfaction*

1. Introduction

In a competitive market, the demand for quality is emerging as the single most critical factor for companies to survive in the ever-expanding global market place.

One of the major reason quality has gained such prominence is because organizations have gained an understanding of the cost of poor quality. Quality affects all aspects of an organization and has serious cost implications. The most obvious is when poor quality cause customer dissatisfaction and consequently lack of patronage. There are two major cost element associated with quality, namely: quality control cost and quality failure cost. The quality control cost is made up of prevention cost and appraisal cost while quality failure cost is made up of internal failure cost and external failure cost. Research has shown that quality control cost is considerably less than quality failure cost.

Another reason adduced for emphasis on quality is because of the phenomena of globalization and competition. As trading barriers are collapsing all over the world and firms are competing for markets that were previously controlled by monopolist; the issue of satisfying the customer has taken centre stage and companies must seek ways to offer the customer better products at cheaper prices. Companies which cannot do this become extinct. The attempt to produce better products at cheaper prices has made the concept of quality imperative as a survival strategy for organizations operating in the 21st century.

2. History of Total Quality Management

The concept of quality has existed for many years though its meaning has changed and evolved over time. Quality can be traced back to the craftsmen era. This was before the industrial revolution. During this era products were produced by skilled craftsmen who set up guilds to ensure that products conformed to standard. The second was the standardization, mass production and quality assurance era (1900-1930). This happened with the formation of factories and increasing automation and as work became progressively deskilled and more repetitive. Thus inspectors were employed to do 100% inspection and differentiate between conforming and non conforming items. This was also the era of Frederick Winslow Taylor who introduced the concept of scientific management with emphasis on work output, labour efficiency and introduction of work study. The third era was the quality control era (1930-1950) when the principal focus was replacing inspection with more informative process control systems which aimed at reducing variation in outputs and delivering more consistency by focusing on inputs. Next was the total quality management (TQM) era (1950-1970) which emphasized organizational quality driven by management. After this was the Standards and Awards Era (1970-1990). This was a period of standardization of the principles of TQM. Examples of standards are BS 5750 and ISO 9000 Quality systems standard. They are externally audited and accredited standards. Finally, we are in what can be termed the initiatives era which started in 1990 until the Present time. This involves the appearance of mega initiatives of which Lean and Six-Sigma are of.

3. Total Quality Management

Ciampa (1992) describes TQM as “the state of an organization in which all the activities of all functions are designed and carried out in such a way that all external customer requirements are met while reducing internal time and cost, and enhancing the workplace climate”.

TQM can be defined as a holistic management philosophy aimed at continuous improvement in all functions of the organization and satisfaction of customers’ needs and requirements by providing quality services under the leadership of top management (Demirbag, Taloglu, Tekinkus, and Zaim 2006). According to Ooi, Arumugam, Loke and Lorraine (2006) TQM is significant because its implementation brings about positive impact on the organization and its employees.

In the case of Deming (1986) he posits that TQM is a philosophy that involves everyone in an organization on continuous effort to improve quality and achieve customer satisfaction. Juran (1995) however suggests that TQM is a description of the culture, attitude and organization of a company that strives to provide customers with products and services that satisfy their needs.

4. Overview of Nigerian telecommunications sector

The Telecommunications industry is a strategic and critical sector of the Nigerian economy. It has security implications. It is also a source of employment and livelihood to millions of Nigerians.

The development of Telecommunication in Nigeria can be traced back to 1851 when the British Post Office established its postal branch in the country. Following this was the establishment of the ‘’key & Sounder’’ system of telecommunication in 1885 used by the colonial masters for effective administration and contact with London Home office. Within this year also local telecommunication using this system was introduced by the colonial government in 1885

under the Public Works Department. The first direct telegraph services between Lagos and London was finally commenced in September 1886.

By 1950 Nigeria had 98 exchanges with 15,063 telephone instruments. The exchanges were of the Magnetic and Central Battery type. In this year also General Electric Corporation installed 600 lines automatic exchange in Port Harcourt which was followed by 500 lines exchange in Lagos by 1953. In 1963 the satellite exchanges of Ikeja with 400 lines, Ebute Metta with 500 and Apapa with 600 commenced. After Nigeria's independence, the sector has undergone several development stages. The first stage was 1962-1968 during which 2,000 direct exchange lines were provided instead of 90,000 that was projected. This period was however interrupted by the civil war. During the period between (1970-1974) the National Telex/Gentex Network, 19 crossbar Telephone Exchanges, Subscriber Trunk Dialing (STD) facilities, between Lagos, Ibadan, Kaduna, Enugu and Benin were developed. Thereafter, the Contingency Plan (1973-1975) was launched with a total of 52,000 lines against the planned 184,000. The next phase was 1975-1980 in which 188,000 of the planned 750, 000 lines was achieved. Between the periods 1981-1985 telephone lines increased to 400,000 instead of the projected 612,000.

In 1985 Nigerian Telecommunications Limited (NITEL) was born by merging the Telecommunication arm of Post & Telecommunication with Nigerian External Telecommunication in 1985. NITEL was given the mandate to provide efficient and reliable telecommunications services for the country at a marginal profit. This mandate could not be achieved as NITEL services were characterized by low call completion, low investment rate, uneconomic investment patterns and management.

With the Global trend in telecommunication moving towards deregulation government was compelled to liberalize the telecommunication sector with the establishment of a regulator, Nigerian Communications Commissions (NCC). Despite the creation of NCC, NITEL still enjoyed a monopoly status with its services still characterized by inaccurate and irredeemable bills. There were also incidences of contested bills. Subscription rates for phone services were also very exorbitant.

With these problems bedeviling NITEL, many private telephone operators like Intercellular, Mobitel, Reltel were licensed but could not deliver as expected.

With the pent up demand and global adoption of GSM technology the door was opened for licensing of GSM operators. The first set of GSM operators, namely MTN, ECONET, NITEL were issued licenses in early 2001 and in August 2001 Econet (now Airtel Bharti) and MTN launched commercial services.

There are presently 8 major telecom companies in Nigeria in Nigeria, namely: MTN, Globacom, Airtel, and Etisalat who offer Global Systems Mobile communication (GSM) while another four namely Visafone, Zoom, Multilinks, Starcoms offer Code Division Multiple Access (CDMA). These companies offer voice, data and video services.

According to Nigerian Telecommunication Commission (2011) as at December 2011 the number of fixed and fixed wireless lines available was 95,886, 714 compared with the 400,000 lines fifteen years ago.

According to Nigerian Pilot (2012) the Executive Vice-Chairman, NCC, Mr. Eugene Juwah, while speaking at a forum said "Nigeria's growth has been mirrored by a concomitant boom in telecommunications in recent time, because the

industry is a sector that holds the key to the realisation of Nigeria's ambition to truly emerge as a dominant developing economy. The importance of communication in any country whether developed or developing is so obvious. In fact the inter-relationship between the economic development of a country and effective telecommunication services is so interwoven that it is difficult to tell which one comes first. Communications has remained permanently visible, with its applicability to almost every human endeavor from agriculture, to food security, to manufacturing, energy and physical infrastructure sectors in all its ramifications for governance, e-commerce and the provision of public and social services".

The figure for active subscribers in mobile networks is around 100 million lines and may surpass 105 million by end of December, 2012

5. MTN Telecommunications Ltd

MTN Nigeria is the largest member of MTN group, a South African company with many subsidiaries spread across the world (21 countries in Africa and Middle East). In Nigeria, the company just marked its 11 years of operation. The company's vision is to be the country's leading telecommunications service provider while its mission is to provide 1st class network quality, customer service and value.

MTN communications Ltd was one of the three (3) initial GSM companies licensed by NCC to provide telecommunications services to the Nigerian public. It commenced operations in August 2001 and has been the largest in all of Nigeria.

MTN has invested billions of dollars in telecoms equipment and infrastructure providing base stations, and other amenities. It has also created job for hundred of thousand of Nigerians directly and indirectly.

In the area of products and services MTN offers various services like MTN happy hour, MTN family and friends etc. It provides services like internet browsing, international roaming, enterprise solutions and airtime services. It also provides MTN blackberry services, data bundle, MTN video calling, fast link, mobile internet. Among all the mobile phone networks, MTN is the most widely spread in terms of coverage and availability.

Successful implementation of TQM in the Nigerian Telecommunications sector will result in improved employee involvement, improved communication, increased productivity, improved quality of service, reduced cost, customer satisfaction, and improved competitive advantage.

6. Statement of the Problem

Even though the Nigerian Telecommunications sector has grown significantly in the past ten years, yet customers still complain of poor customer service, drop calls, high call rate, network blockage or congestion, and service quality problems. Piqued by these falling standard of quality of services the Nigerian Telecommunications Commission had to slam a whopping sum of N1.17billion fine on all four (4) GSM operators (Guardian May 10th 2012). This problem of quality may be due to non-adoption of TQM practices by the Telecommunications companies. There is however a scarcity of literature on factors responsible for this development; hence we intend to appraise the TQM practices in this industry and to develop a model for applying TQM practices for better

delivery of services in the Nigerian telecommunication sector.

Objectives of this research

1. To examine if Total Quality Management is being practiced in the Nigerian Telecommunications sector
2. To assess the impact of Top management commitment on employee satisfaction
3. To assess the impact of continuous training in quality on customer satisfaction

Research question

1. Would the Top management commitment lead employee satisfaction?
2. Would quality training in quality lead to customer satisfaction?

Literature Review

Theoretical Framework

Walter A. Shewart laid the foundation for the application of Statistical quality control to quality management while W. Edwards Deming followed with 14 principles of implementing total quality management. These points are namely:- The fourteen points proposed by Deming are to create constancy of purpose towards improvement of product and service; adopt the new philosophy of we can no longer live with commonly accepted levels of delays, mistakes, and defective workmanship; cease dependence on mass inspection. Instead, require statistical evidence that quality is built in; end the practice of awarding business on the basis of price; find problems because it is management's job to work continually on the system; institute modern method of training on the job; institute modern methods of supervision of production workers; the responsibility of foreman must be changed from numbers to quality; drive out fear, so that everyone may work effectively for the company; break down barriers between departments; eliminate numerical goals, posters and slogans for the workforce asking for new levels of productivity without providing methods; eliminate work standards that prescribe numerical quotas; remove barriers that stand between hourly worker and their right to pride of workmanship; institute a vigorous programme of education and retraining; create a structure in top management that will push on the above point every day. Deming was also reported to have introduced a systematic approach to problem solving and promoted the widely known Plan, Do, Check, Act (PDCA) cycle

Joseph M. Juran is the next quality guru. In terms of contribution, Juran concentrated not just on the end customer but also on other external and internal customers. According to him each person along the chain, from product designer to final user is a supplier and a customer. In addition the person will be a process, carrying out more transformation or activity.

Another leader is Armand V. Feigenbaum who looked at Quality using the system approach. He emphasized the idea of a work environment where quality development is integrated throughout the entire organization. He defined is total quality control as an "An effective system for integrating quality development, quality maintenance and quality improvement efforts in various groups within an organization so as to enable production and service at the most economical levels that allow full customer satisfaction". Faigenbaum saw it as business method and proposed three steps to quality which are quality leadership; modern quality technology; organizational commitment.

Following Feigenbaum was Phillip B. Crosby who emphasized the concepts of "zero defects" and "do it right the first time".

Kaoru Ishikawa is best known for his development of quality tools like “fishbone” diagram. He also emphasized the concept of “internal customer” and the use of “quality circles” to solve quality problems.

Genichi Taguchi contribution was in product design. According to him, 80 percent of defective products are caused by poor product design. He developed the “Taguchi Loss function” which shows that the cost of quality increase as a quadratic function as conformance values moves away from the target. There are also numerous contributors to total quality which will be considered below.

In the study by Brah, Wong and Rao (2000) 11 different concepts of TQM were suggested, which are customer focus, process improvement, quality improvement rewards, cleanliness and organization, service design, benchmarking, employee empowerment, top management support, customer focus, employee involvement, employee training, supplier quality management. Bayraktar, Tatiglu, and Saim (2008) were able to identify 11 critical success factors (CSFs) for the implementation of TQM, which are employee involvement, recognition and award, education and training, quality system improvement, student focus, program design, process control and improvement, measurement and evaluation, vision, other stakeholder focus, leadership. In the case of Talib, Rahman and Quresh (2010) they posited that there are 17 practices needed for the successful adoption of TQM in the service sector which are: top management commitment, customer focus, training and education, continuous improvement, and innovation, supplier management, employee involvement, information and analysis, process management, quality system, benchmarking, quality culture, human resource management, strategic planning, employee encouragement, teamwork, communication, process and service design. Sureshchandar et al (2002) in his work argued that there are 12 major practices which comprise top management commitment and visionary leadership, human resource management, technical system, information and analysis system, benchmarking, continuous improvement, customer focus, employee satisfaction, union intervention, social responsibility, servicescapes, and service culture. According to Mehra, Hoffman and Sirias(2001) there are 45 elements that affect TQM which are : top management commitment, suppliers involvement, small supplier base, total employee involvement, teams, training, leadership, customer focus, human resource, management style, organizational structure, ownership, continuous improvement, consultants, business culture, process oriented, statistical tools, quality audits, empowerment, quality planning, quality data, mechanism to set priorities, mechanism to coordinate activities, quality council or steering committee, written policy on quality, measurement of key result areas, reward system tied to key measures, customer oriented reward system, recognition and celebration, deployment of key information to all employees, quality related goals, flatter organizations, group incentive systems, decentralization of operational decisions, lateral communication, decisions based on data, benchmarking, measurement of cost of quality, customer oriented product development, long term employment, technical competence of senior corporate executive, board of directors involvement, management tools, right brain thinking, recognition of environmental issues. All these 45 elements he was able to summarize under 5 headings which are: human resource focus, management structure, quality tools, supplier support, customer orientation.

Performance Measurement

Numerous studies have examined the positive and negative (or non-significant) relationships or

contributions between TQM practices and various performance measures. This section examines different performance measures. Hermann et al (2006) considered quality performance, reduction in cost and shorter R&D time as performance measures whereas in the case of Yang (2006) he measured quality performance by using the following indicators namely: Employee satisfaction, employee quality awareness, customer satisfaction and company image.

Conceptual Framework

Through the comprehensive review of TQM literature, the present study identified a set of 8 essential TQM practices on which the conceptual framework of this study will be based. They are: - top management commitment, customer focus, strategic focus, process focus, employee empowerment, training, continual improvement, and managing suppliers' quality. The reasons for selecting these practices are:

- They constitute practices that represent the hard and soft components of TQM
- Have been used frequently by different researchers in the service industry

Hence, it is believed that these practices are suitable to the used in the Nigerian service sector.

Top management commitment to TQM

The involvement and commitment of top management is topmost in the implementation of total quality management as agreed by different authors as cited above. According to Mehra et al (2001) top management provides both the physical and leadership needs of the organization and most organizational changes and training needs require top management approval. He said further that in addition, top management behavior signals to all employees the importance of TQM and that the job of top management is coaching and facilitating

Continuous Training in Quality

Training is the single most significant component in trying to improve quality (0akland, 1989). He argues that ''quality training must be continuous to meet not only changes in technology but also changes involving the environment in which an organization operates, its structure, and perhaps most important the of all the people who work there".

According to Brown (1994) and Patel (1993) effective TQM implementation requires a training policy which will be part of the overall quality Strategy with the aims of improving the necessary skills for continuous quality improvement. According to Wagoner (n.d) one of the key elements affecting TQM success or failure is knowledge and understanding. He argues further that for TQM to succeed employees must understand what TQM is, what it can do and why its being pursued by the organization. According to the study by Olian & Rynes (1991) it was found that the most mentioned topic found in training for TQM, presented in order of frequency were interpersonal skills, quality improvement processes and problem solving, team leading and building, running meetings and statistical analysis.

Customer satisfaction

According to Fornell(1992) a key motivation for the growing emphasis on customer satisfaction is that high customer satisfaction lead to a stronger competitive position resulting in higher market share and profit. Deng et al (2009) posits that the ability of a service provider to create a high degree of satisfaction is crucial for product differentiation and developing strong relationship with customers. The service a brand offer and the price it charges actually determine

the level of satisfaction among its customer than any other measure (Turel and Serenko 2006). According to Eklof and Westlund (2002) using the European Customer Satisfaction Index (ECSI) customer satisfaction is caused by some factors such as perceived quality (PQ), perceived value (PV), expectation of customers and image of a firm.

Employee satisfaction

Rousseau (1978) identified three elements of employee satisfaction which are organization characteristics, personal characteristics and job task factor. According to the study by Judge et al (1993) employee satisfaction is the degree to which a person feels satisfied by his/her job and positively correlated with motivation, job involvement, organizational citizenship behavior, organizational commitment, life satisfaction, mental health, and job performance and negatively related to absenteeism, turnover and perceived stress on the job.

Research Methods

For this research work, survey design was adopted. One hundred and fifty (150) questionnaires were administered to customers of MTN Limited within the Lagos environ. These customers were randomly selected at five (5) different MTN customer care centres within the five divisions of Lagos State. These divisions include Epe, Ikorodu, Lagos Island, Lagos Mainland and Badagry.

Thirty (30) questionnaires were administered at each centre. Fifty (50) questionnaires were also administered to employees of MTN and a total of twenty (20) questionnaires were administered to top management in the same organizations. The data collected were analyzed using descriptive statistics and regression analysis.

Model Summary

Model summary of Top Commitment and Employee Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	Sig. F Change
1	.953[a]	.907	.876	31.192	.907	29.379	.012

a. Predictors: (Constant), TOP MANAGEMENT COMMITMENT

Table 1

Model Summary of Continuous Training in Quality and Customer Satisfaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	Sig. F Change
1	.833[a]	.694	.592	50.354	.694	6.801	.080

a. Predictors: (Constant), CONTINUOUS TRAINING IN QUALITY

Table 2

Findings

From the Model Summary 1 above, the coefficient of determination (R^2) gave a value of 0.907 This value reveals that 90.7% of the changes or variation that occurred in the employees' satisfaction could be traced to the policy and commitment of top management of MTN. Also, the value of 0.694 representing the coefficient of determination in Model Summary 2 indicates 69.4% of the changes or variation that occurred in customer satisfaction could be attributed to the continuous training in quality in MTN.

Discussion

The Telecommunications industry is a strategic and critical sector of the Nigerian economy. It has security implications and also is a source of employment and livelihood to millions of Nigerians. Its performance is therefore vital for social and economic wellbeing of the nation.

Implementation of TQM in this critical sector will enhance its performance which will in effect have positive social and economic implications.

Our findings in this study show that there is a positive correlation between top management commitment and employee satisfaction. This implies that top management in MTN is committed to the implementation of TQM and that this leads to employee satisfaction. This is in agreement with the findings of Mehra et al (2001) that top management commitment which is demonstrated in form of coaching and facilitating the quality process leads to employees' participation and satisfaction.

In the same vein, there is a positive correlation between continuous training in quality and customer satisfaction. This implies that continuous training in quality is practiced at MTN leading to customer's satisfaction. This agrees with the opinion of Wagoner (n.d) that one of the key success factors for successful implementation of TQM is knowledge and understanding which is gained through continuous training. The successful implementation of TQM leads ultimately to customer satisfaction. This also agrees with the position of Oakland (1989) that training is the single most important significant component in trying to improve quality.

Conclusion and Recommendation

Based on our research findings TQM is being practiced in the Nigerian Telecommunications sector. The reason for customers' complaints is due to lack of adequate power supply and vandalisation of its infrastructure which affects the operational capacity of these organizations and their quality of service. This agrees with the position of several stakeholders in the industry. According to ThisDay (2012), Dr Ekuwem, former President of ATCON (Association of Telecommunications of Nigeria) posited that the greatest threat to the growth of telecommunications and information technology sector is insufficient and epileptic public power supply. Also, according to Nigerian Pilot (2012) Engr Gbenga Adebayo, Chairman ATLON (Association of Licensed Telecommunications Operators of Nigeria opined that fines or penalties will not solve the problems with service of telecommunications companies, and that the fundamental problems are issues of power and protection of telecom infrastructure.

A large proportion of Telecom operators' expenses are used to procure and power generators and also to replace damaged telecom infrastructure. These generators, diesel, and equipment are imported thereby leading to loss of foreign exchange which is not healthy for the growth of the industry and the economy. Consequently, this study wishes to make the following recommendations:-

1. Training of Telecommunications personnel especially low and middle level management to appreciate the importance of total quality

management as a cost reduction strategy

2. There is need for telecommunications companies in addressing their energy problem to adopt renewable energy options like solar power.
3. There is the need for government to work assiduously to improve power supply
4. There is the need for telecommunication company to co-locate their telecommunication masts
5. There is also the need for security agencies like the Nigerian Police and State Security Services to be well equipped and funded to prevent vandalisation of telecommunications infrastructure.

References

Akao, Y. (1990). *Quality Function Deployment* Cambridge, MA: Productivity Press

Baidoun, S. (2003). An Empirical Study of Critical Factors of TQM in Palestinian Organizations. *Logistics information management*. 16(2) 156-171.

Bayraktar,E; Tatiglu, E & Saim, S. (2008). An Instrument for Measuring the Critical Factor of TQM in Turkish Higher Education. *Total Quality Management and Business Excellence* 19(6) 551-574.

Besterfield,H.D., Besterfield-Michna,C., Besterfield, H.G., & Besterfield-Sacre,M. (1999). *Total quality management* (2nd ed.).London: Prentice Hall

Bounds, G.M. (1995). *Management: A Total Quality Perspective*. Cincinnati: South Western College

Brah, S.A; Wong, J.L. & Rao B.M.2000. TQM and Business Performance in the Service Sector: A Singapore Study. *International Journal of Operations and Production Management* 19(4) 1293-1312

Brown,A. (1994). *TQM:* Implications for Training. *Training for Quality.* 2(3). 4-10

Chou, C.M & Chang, S.C. (2006). Factors Affecting China Mobile Customer Satisfaction. http//www.decisionsciences.org/proceedings/DS12008/docs/17-9824

Deming, W.E (1986). Out of Crisis. Cambridge. MIT USA

Demirbag,M., Taloglu,E., Tekinkus, M., and Zain, S (2006). An analysis of the relationship between TQM implementation and organizational performance. Journal of manufacturing Technology Management. 30 (6) 29-49

Deng, Z., Lu, Y; Wei, K. K & Zhang, J. (2009). Understanding Customer Satisfaction and Loyalty: An Empirical Study of Mobile Instant Messages in China. *International Journal of Information Management*. 30 289–300

***Department of Trade and Industry (n.d): *The original quality gurus*. www.dti.gov.uk/quality/gurus. March 19, 2012

Eklöf, J. and Westlund, A.H. (2002). The European Customer Satisfaction Index: It's Background and the Role of Private Concerns and Public Utilities in Fabris, G., Rolanda, S. (Eds.), La customer satisfaction. Nel settore pubblico, Franco Angeli Publishers, Milano

Fornell, C. (1992). A National Satisfaction Barometer: The Swedish Experience. *Journal of Marketing* 56, 6–21

Goetsch, D.L & Davis, S.B (2010). *Quality Management for Organizational Excellence: Introduction to Total Quality*. Pearson. NJ

Gustafsson, A., Johnson, M.D., & Roos, I. (2005). The Effects of Customer Satisfaction, Relationship Commitment Dimensions, and Triggers on Customer Retention. *Journal of Marketing.* 69, 210–218.

Hanif, M; Hafeez, S & Riaz, A. (2010). Factors Affecting Customer Satisfaction.

International Research Journal of Finance and Economics. 60, 44-52.

Hermann, A., Huber, F., Algesheime, R & Tomezak, T. (2006). An Empirical Study of Quality Function Deployment On Company Performance. *International Journal of Quality & Reliability Management.* 23, 345-366.

Irianto. D. (2005). Quality *Management Implementation: A Multiple Case Study in Indonesian Manufacturing Firms*. University of Twente, The Netherlands.

Judge, T.A & Hulin, C.L. (1993). Job Satisfaction as a Reflection of a Disposition: A Multiple Source Causal Analysis. *Organizational Behaviour and Human Decisions Processes*, 56, 388-421.

Juran, J. M., (1974), Quality control handbook. London. McGraw-Hill

Juran, J.M., Gryna, F.M (1999). Quality planning and analysis. McGraw-Hill. 5th

***Karia. N., Asaari .M.H.A.H. (2003). TQM Practices: Continuous Improvement and Problem Prevention. International Business Information Management Conference*, Refereed Proceeding*, Cairo, Egypt, 498-502. Support of Non-Financial Management Accounting Practices. Utah State University, Utah, USA

Khan, M.A., (2010). Evaluating the Deming Management Model of TQM in Telecommunication Industry in Pakistan-An Empirical Study. *International Journal of Business and Management*. 5(9), 46-58.

Knowles, G. (2011). *Quality management: Bookboon.com* Graeme Knowles &Ventus Publishing Alps.

Lascelles, D. and Dales, B. (1989). The Buyer-Supplier Relationship in Total Quality Management. *Journal of Purchasing and Materials Management*. Summer. 10-19.

Mehra S., Hoffman. J.M., Sirias .D. (2001). TQM as a management strategy for the next millennia. *International journal of operations & production management*. 21(5/6) 855-876

Munro, R. (2000). Linking six sigma with QS-9000. *Quality Progress*, May. 47-53.

Nigerian Telecommunications Commission (2011): *Quarterly Summary Of Telecom Subscriber in Nigeria*

Nosakhare.J.O. (2000). *Organizational Approach to Total Quality Management in Nigeria*. Unpublished Ph.D thesis, St. Clements University

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

Oakland, J. (2000). *Total Quality Management, Text With Cases*, 2nd ed., Butterworth Heinemann, Oxford

Olian,J.D & Rynes,S.L. (1991). Making Total Quality Work: Aligning Organizational Process, Performance Measures And Stakeholders. Human Resource Management 30, 303-333

Ooi,K,B., Arumugam .V., Loke K.Y., Lorraine.S.V (2006) Relationship of TQM practices and employees propensity to remain: an emphirical case study. TQM magazine. 18(5) 528-541

Osland, A (1997). Impact of Total Quality Management Training and Work Context on attitudes towards supervisors. *The international Journal of organizational analysis* 5(3) 291-301

Patel, A (1993) Total Quality Management: Paving The Way for Future Training. *Industrial and Commercial Training*. 25(2), 23-32.

Parzinger,M.J., & Nath, R. (2000). A Study of the Relationship between Total Quality Management Implementation Factors and Software Quality. *Total Quality Management*. 11(3). 353-371.

***Rosemary R.F. (2006). Thesis PHD: Financial Consequence of Implementation of Lean Manufacturing With the???

Rousseau, D. (1978). Characteristics of Departments, Positions, And Individuals: Contexts for Attitudes and Behaviors, *Administrative Science Quarterly.* 23, 521–540.

Samat, N;Ramayah, T & Saad, M; (2006). TQM Practices, Service Quality, and Market Orientation. *Management Research News* 29(11), 713-728.

Sajjad F & Amjad S. (2012). Role of Benchmarking in Total Quality Management: A Case Study of Telecom Services Sector of Pakistan. Business Management Dynamics 1(8,) 34-44.

Su, C.T., Chen, M.C., & Cheng, G.C. (2001). TQM in Taiwan's Computer and Its Peripheral Industry, Industrial Management and Data Systems. 101(7), 357-362.

Slack.N., Chambers, S.; Johnstone, R.,& Betts, A.(2006.) Operations and Process Management. Prentice Hall, London.

Stenberg, A. & Deleryd, M. (1999). Implementation of Statistical Process Control and Process Capability Studies: Requirements or Free Will?. *Total Quality Management*, 10 (4), 439-46.

Sit, W.Y., Ooi, K.B., Lin, B & Chong, A.Y.L (2009). TQM and Customer Satisfaction in Malaysia's Service Sector. *Industrial Management and Data systems*. 109(7), 957-975.

Soedarso, S.W. (2009). Doctor of Business Administration Thesis. TQM Extension Practices and Performance: a case study Malaysian aerospace industry???

Sureshchandar, G.S., Rajendran,C & Anantharaman, R.N. (2002). The Relationship between Management's Perception of Total Quality Service and Customer Perception of Service Quality. *Total Quality Management*. 13(1) 69-88.

Taguchi, G. (1979). *Introduction to Off-Line Quality Control*. Japanese Standards Association, Tokyo.

Talib, F; Rahman, Z & Quresh, M.N (2010). The relationship between total quality management and quality performance in the service industry: a theoretical model. *International Journal of Business, Management and social sciences* 1(1), 113-118.

The Guardian Newspaper. www.ngrguardiannews.com Accessed. 28/10/2012

The Punch Newspapers.www.punchng.com. Accessed.28/10/2012

Turel, O. & Serenko, A. (2006). Satisfaction with Mobile Services in Canada: An Empirical Investigation. Telecommunication Policy 30(5) 314-331.

Ukodie, A. (2010): *50 years of ICT in Nigeria: The st ory, the players.* Lagos: eworld Magazine

Vavra.T.G. (2002). ISO 9001:2000 and customer satisfaction. Quality progress, 35(5), 69-75.

***Wagoner Rick (n.d) Role of Leadership and the Employees on the Success and Failure of TQM. Morehead State University

Wilkinson, A. (1998). Empowerment: Theory and Practice. Personnel Review, 27(1), 40-56.

Zairi, M. (1997).Business process management: a boundary less approach to modern competitiveness. *Business process management journal* 3(1) 64-80

Zairi, M. & Baidoun, S. (2003) Working Papers. Understanding the essentials of total quality management: A best practice approach part 2 3(5)

***Zaim, H & Zaim, S. (n.d) Measuring Employee Satisfaction in Small and Medium Sized Enterprises

Zaim, S; Turyilmoz, A;Ucar, B & Akkas, Oguz (2010). Measuring Customer Satisfaction in Turks Telecom Company Using Structural Equation Modeling Technique. *Journal of Global Strategic Management***.** 7, 89-99.

Yang C.C. (2006). The impact of Human Resource Management Practices in the Implementation of TQM: An Empirical Study on High-Tech Firms. *The TQM magazine* 18(2), 166-173.