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A STUDY ON TOTAL QUALITY MANAGEMENT PROCESS WITH REFERENCE TO SWITCHING INFO TECHNOLOGY GUNTHER, CHENNAI

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ABSTRACT

The purpose of the research is to know the perception of an employee towards quality maintenance, to measure the present quality management process, to study the customer and employee satisfaction towards the TQM practices in the organization, to analyze the total quality management improvement program, to reveal the challenges faced by company to maintain the TQM and to provide suggestion to improve TQM process in switching info technology Gunther. Descriptive research design has been applied in this study. Lottery method is used under probability sampling technique collect the samples. The population is 153 and the Sample size is 110.Nominal, ordinal, interval, dichotomous, and likert scales used in the questionnaire design.. Both primary and secondary data are collected. Structured questionnaires was used to conduct survey. The tools used for data analysis are Percentage Analysis, Chi-Square Analysis, Correlation, One Way ANOVA and Weighted Average.

Key words : Customers Satisfaction, Employees, Perception, TQM, Top Management.

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1. INTRODUCTION

Manufacturing sector is the prime contributor of India's GDP. Quality is one important aspect which the Indian industries had been meticulously improving and had emerged successfully. Though the awareness about quality was less among the companies before liberalization (the new Economic policy of 1991), they have made a considerable improvement after that due to

increased competition, customer demands, world class manufacturing facilities and training on the quality front. When it comes to the global arena, India still has industry specific shortcomings in quality. Automobile, Pharma, Power industry are among the few where Indian companies strive to achieve world class quality. This paper examines the issue of quality implementation at Switching Technologies Gunther Ltd, Chennai. Switching Technologies Gunther Ltd. is engaged in the manufacture of reed switches. The company was found in 1988. Switching Technologies Gunther Limited is an India-based company, which is engaged in manufacturing and sale of electrical and electronic components. The Company manufactures electronic components, such as reed switches, proximity sensors and ball switches. The Company manufactures miniature and standard reed switches, including pressurized switches and change over switches.

2. OBJECTIVES OF THE STUDY

- To know the perception of an employee towards quality maintenance.
- To measure the present quality management and process.
- To study the customer and employee satisfaction towards the TQM practices in an organization.
- To analyze the total quality management improvement program.
- To reveal the challenges faced by company to maintain the TQM.
- To provide suggestion to improve TQM in switching info technology Gunther.

3. NEED FOR THE STUDY

In the present competitive world, the need for total quality management is gaining more and more importance. Competitive pressures in the global manufacturing environment are forcing manufacturing organizations to re-engineer in order to become more competitive in the marketplace. Manufacturing of electronic devices plays a crucial role in all aspects. Logically there are tremendous benefits and this is a sure way of ensuring that the firm is generating revenue regardless of the market trends. Implementing a quality management system is an essential thing to divide activities on some main steps and to maintain the continuous improvement to meeting the customer's requirements, which helps to instill confidence in the organization, in turn leading to more customers, more sales and more business. The actual process and the implementation constraints are effectively stated through this study.

4. STATEMENT OF THE PROBLEM

The quality revolution has happened in India and its impact is not the same across all industries. The implementation of quality management in a company depends on the level of top management commitment, the time period, the scale of the company, workers involvement, intensity of training imparted, the system adopted and the effectiveness of leadership. As discussed earlier, the quality struggle still persists because of disparity in minimum quality standards across industries, large gap in standards between leading and trailing firms, nonreplicable sampling, etc. There is a concrete need to study the actual scenario of the quality issues in the grass root level. Hence this research is undertaken to examine the TQM implementation process and the constraints associated with it.

5. REVIEW OF LITERATURE

Anderson (2001) in his theory of quality management had emphasized that the leadership efforts play a crucial role in creating a quality management culture in the organization. The effective implementation results in better customer satisfaction and sustainability of the organization. The control mechanism existing in the organization also plays a vital role in the ensuing quality.

Seetharaman (2006) had made an attempt to examine the reasons for the TQM implementation failure in many organizations. Even though the organization are committed towards the cause and adopt the TQM process, there are certain unavoidable factors which cause either delay or even failure of the process. If the root cause for failure is not analysed and rectified, the TQM process does not yield any fruitful results at all.

Nwabueze (2001) in his study had insisted that organizations should focus on partnership development – both internal and external partnerships. Internal partnership among labour and management is essential for cooperation while external partnership with suppliers, customers and training facilitators enable success. Effective internal and external partnerships results in mission accomplishment.

Oakland (2003) had summarized that the management approach determines the performance with respect to quality. It is the duty of the management to prescribe proper guidelines for the effective implementation of quality process.

Motwani (2001) in his research**,** had identified seven factors critical to TQM implementation. The seven factors include top management commitmnet; product design; employee training and empowerment; vendor quality management; and customer involvement and satisfaction.

Nofal (2005) through his research has identified various factors for successful TQM implementation. Involvement of senior executives, comprehensive policy development and effective deployment of goals; entire workforce commitment to quality goals of the organization; active participation of functional level managers and workers, effective communication, recognition of efforts are some of the noteworthy factors.

Bou-Llusar (2009) had categorized the factors of quality as hard and soft. Systems and quality tools and techniques are referred to as the hard factors of quality. Benchmarking, performance measurement, quality control tools, cost of quality, supplier customer management and quality management systems are included in the hard category of factors. Leadership, involvement and training are the soft factors. He has proposed a combination of 19 elements of TQM. The elements include leadership; employee involvement and empowerment; middle management role; training and education; rewards and recognition; teamwork; role of employee unions; policy and strategy; resources management; communicating management; managing suppliers; accredited quality management system; organizing for quality; managing by process; benchmarking; self-assessment; cost of quality; quality control techniques; and measuring customer wants and satisfaction.

These reviews make clear that every organization would have issues in the adoption and implementation of quality process and it would not be a smooth sail altogether. The factors may vary depending on the complexity of the organization, its level of preparedness, involvement of management and employees and the intensity of efforts. Based on these reviews, this study is undertaken to obtain a better perspective over the TQM process at Switching Technologies Gunther Ltd, Chennai

6. RESEARCH METHODOLOGY

Descriptive research design has been applied in this study. Lottery method is used under probability sampling technique to collect the samples. The total population size is 153. Sample size is 110. Both primary and secondary data are collected through questionnaire, company websites, journal and article reviews. Structured questionnaire had been used to conduct survey. The tools used for data analysis are, Percentage Analysis, Chi-Square Analysis, Correlation, One Way ANOVA and Weighted Average.

7. HYPOTHESIS

- (H0): There is no significant association between experience and employess are allowed to give feedback to the organization.
- (H0): There is no significant association between gender and rewards,recognation and promotion for TQM reinforcement effectively.
- (H0): There is no significant association between education and consideration of customers complaints for improvement.
- (H0): There is no significant relationship between Organizations's TQM infrastructure and Need to reduce scrap and rework.
- (H0): There is no significant relationship between customer satisfactions has shown improvement and pressure from competitors and demand from the customer.
- (H0): There is no significant difference between experience and improvements towards TQM.

8. QUESTIONNAIRE DESIGN

- The questionnaire consists of five parts.
- The first parts deals with demographic variables like Gender, Age, Educational qualification, marital status, Experience, and Monthly income.
- The second part is about perception of an employee towards quality maintenance and it consists of four questions.
- The third part aims to measure the present quality management and process which has five questions.
- The forth part comprises employees and customers satisfaction towards the TQM practices in an organization.
- The fifth part is on improvement program in TQM.

9. LIMITATIONS OF THE STUDY

The research was conducted only on a small size of population, the sample size is taken from 110 respondents. There were some constraints in data collection. Some of the respondents did not give information because of their busy work schedule, some respondents were not aware about TQM concept and fount it difficult to answer the questions and there was also the language problem. Time is one major constraint, which limited the size of data collection.

10. DATA ANALYSIS

Table 1 PERCENTAGE ANALYSIS OF DEMOGRAPHIC VARIBLES

QUESTION	VARIABLES	FREQUENCY	PERCENTAGE
GENDERS	Male	77	70
	Female	33	30
	Total	110	100
AGE	18-25	4	4
	26-35	52	47
	36-45	54	49
	Above 46	0	0
	Total	110	100
EDUCATIONAL QUALIFICATION	10^{th}	1	1
	Graduate	55	50
	Up to PG	7	6
	Others	47	43
	Total	110	100
MARITAL STATUS	Single	30	27
	Married	80	73
	Total	110	100
EXPERCIENCE	1-2 year	3	3
	3-5 year	9	8
	5-8 year	32	29
	Above 8 years	66	60
	Total	110	100
MONTHLY INCOME	5001-10000	1	1
	10001-15000	10	9
	15001-20000	27	25
	Above 20000	72	65
	Total	110	100

Source: Primary data

11. DISCUSSION OF RESULTS

From the above table it is clear that 70% of the respondents are male and 30% of the respondents are female, 4% of the respondents are in the age group between 18-25yrs, 47% in the category 26-35yrs, 49% are between 36-45 yrs. It is also clear that 1% of the respondents are qualified upto 10^{th} std, 50% of the respondents are UG graduates , 6% are post graduates and 43% of the respondents have studied others diploma courses. 27% of the respondents are unmarried and 73% are married, 3% of the respondents have 1-2 yrs experience, 8% have 3-5 yrs experience and 29% have above 5-8 yrs of experience. 60% of the respondents have above 8 yrs experience, 1% of the respondents earn income between 5001-10000, 9% of respondents earn between 10001-15000 and 25% respondents are getting salary between 15001-20000 and 65% of the respondents earn above 20000.

CHI SQUARE ANALYSIS FOR EDUCATION AND CUSTOMERS COMPLAINTS HAS CONSIDER FOR THE IMPROVEMENT.

Null hypothesis (H0):

There is no significant association between education and consideration of customers complaints for the improvement.

Alternative Hypothesis (H1):

There is significant association between education and consideration of customers complaints for the improvement.

Table 2

Educational Qualification * Customer's complaints has consider for the improvement Crosstabulation

			Customer's complaints has consider for the improvement		
			Yes	No	Total
Educational Qualification	Upto 10th	Count	0	1	1
		% within Educational Qualification	0.0%	100.0%	100.0%
		% within Customer's complaints has consider for the improvement	0.0%	8.3%	0.9%
		% of Total	0.0%	0.9%	0.9%
	upto UG	Count	52	3	55
		% within Educational Qualification	94.5%	5.5%	100.0%
		% within Customer's complaints has consider for the improvement	53.1%	25.0%	50.0%
		% of Total	47.3%	2.7%	50.0%
	Upto PG	Count	6	1	7
		% within Educational Qualification	85.7%	14.3%	100.0%
		% within Customer's complaints has consider for the improvement	6.1%	8.3%	6.4%
		% of Total	5.5%	0.9%	6.4%
	Others	Count	40	7	47
		% within Educational Qualification	85.1%	14.9%	100.0%
		% within Customer's complaints has consider for the improvement	40.8%	58.3%	42.7%
		% of Total	36.4%	6.4%	42.7%
Total		Count	98	12	110
		% within Educational Qualification	89.1%	10.9%	100.0%
		% within Customer's complaints has consider for the improvement	100.0%	100.0%	100.0%
		% of Total	89.1%	10.9%	100.0%

Source: Tools applied to Primary data

12. RESULT DISCUSSION

53% of the respondents with Undergraduate education agree that customers complaints have to be considered for the improvement and 25% disagree with that. 6% 0f the postgraduate employees agree with the same and 8% of the respondents disagree with that. 41% of the respondents who have studied other courses agree and 58% do not agree with the same.

Table 3			
Chi-Square Tests	**Value**	**Df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	10.700a	3	.013
Likelihood Ratio	7.226	3	.065
Linear-by-Linear Association	.449	1	.503
N of Valid Cases	110		
Source : Primary data a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is .11.			

From the above table, the P value is 10.700 and the significant level is 0.013.Since the calculated value is less than the P value (0.013<0.05), it denotes null hypothesis is rejected. There is significant association between the level of education and consideration of customers complaints for the improvement. Hence we accept the alternative hypothesis. Therefore education of employees influences consideration of customer's complaints which leads to improvement of TQM**.**

CORRELATION ANALYSIS FOR ORGANIZATIONS DEVELOP A TQM INFRASTRUCTURE EFFECTIVELY AND NEED TO REDUCE SCRAP AND REWORK

Null Hypothesis (H0): There is no significant relationship between Organizations developing a TQM infrastructure effectively and the need to reduce scrap and rework.

Alternative Hypothesis (H1): There is significant relationship between Organizations developing a TQM infrastructure effectively and the need to reduce scrap and rework.

Table 4

Correlation Analysis		**Organization develop a TQM infrastructure effectively.**	**Need to reduce scrap and rework**
Organization develop a TQM infrastructure effectively.	Pearson Correlation	1	-.327**
	Sig. (2-tailed)		.000
	N	110	110
Need to reduce scrap and rework	Pearson Correlation	-.327**	1
	Sig. (2-tailed)	.000	
	N	110	110
**. Correlation is significant at the 0.01 level (2-tailed).			

Correlation value is -.327** and the p value is .000

Source: Primary data

Correlation r 108= (Total number of sample size-degrees of freedom, (ie) 110-2=108)

The calculated value is less than the P value (0.000<0.05).which suggests that the null hypothesis is rejected at the level of significance is 0.01 and the alternative hypothesis is accepted. So the test is significant (There is a significant relationship between Organization developing a TQM infrastructure effectively and Need to reduce scrap and rework) and the correlation lies between +1 to -1.

RESULT: There is a significant negative relationship between Organization developing a TQM infrastructure effectively and Need to reduce scrap and rework, r (108) =-.327, P=.000.

CORRELATION ANALYSIS FOR CUSTOMER SATISFACTIONS HAS SHOWN IMPROVEMENT AND PRESSURE FROM COMPETITORS AND DEMAND FROM THE CUSTOMER

Null Hypothesis (H0): There is no significant relationship between improvement in customer satisfactions and pressure from competitors and demand from the customer.

Alternative Hypothesis (H1): There is significant relationship between improvement in customer satisfactions and pressure from competitors and demand from the customer.

Table 5

Correlation Analysis		Customer satisfaction has shown improvement.	Pressure from competitors and demand from the customer
Customer satisfaction has shown improvement.	Pearson Correlation	1	.070
	Sig. (2-tailed)		.047
	N	110	110
Pressure from competitors and demand from the customer	Pearson Correlation	.070	1
	Sig. (2-tailed)	.467	
	N	110	110

Correlation value is 0.070 and the p value is .467

Correlation r 108= (Total number of sample size-degrees of freedom, (i-e) 110-2=108)

Since the calculated value is less than the P value (0.047<0.05), alternate hypothesis is accepted and the null hypothesis rejected. So the test is significant (there is significant relationship between improvement in customer satisfactions and pressure from competitors and demand from the customer) and the correlation lies between +1 to -1.

RESULT: There is significant positive relationship between improvement in customer satisfactions and pressure from competitors and demand from the customer, r (108) =0.070, P=.000.

ONE-WAY ANOVA FOR EXPERIENCE AND IMPROVEMENTS TOWARTS TQM

Null Hypothesis (Ho): There is no significant difference between experience and improvements towards TQM.

Alternative Hypothesis (H1): There is significant difference between experience and improvements towards TQM.

Table 6 ANOVA

Experience	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	14.319	3	4.773	10.317	.000
Within Groups	49.036	106	.463		
Total	63.355	109			

Source: Primary data

From the above table the F value is 10.317 and the p value is 0.000. As the calculated value is less than the P value (0.000<0.05), the null hypothesis is rejected and the alternative

hypothesis is accepted. There is a significant difference between the experience and improvements towards TQM. Hence the alternate hypothesis is accepted. The test score differs significantly between experience and improvements towards TQM. Hence, experience has significant impact on TQM improvement, F (3,106) =10.317, P=.000

WEIGHTED AVERAGE METHOD FOR CUSTOMERS SATISFACTION HAS SHOWN IMPROVEMENT.

Table 7

LEVELS OF AGREE	NO OF RESPONDENTS	WEIGHTED ASSIGNED	WEIGHTED AVERAGE
Strongly agree	33	5	165
Agree	50	4	200
Neutral	15	3	45
Disagree	9	2	18
Strongly disagree	3	1	3
Total	110		431

Source: Primary data

WEIGHTED AVERAGE = ∑FW / ∑F

= 431/ 100

= 3.91

= 4

INFERENCE:

It is found that majority of the respondents agree with the statement that Customers satisfaction has shown improvement.

WEIGHTED AVERAGE METHOD FOR ORGANIZATION DEVELOP A PLAN TO ACHIEVE QUALITY MANAGEMENT.

Table 7

LEVELS OF AGREE	NO OF RESPONDENTS	WEIGHTED ASSIGNED	WEIGHTED AVERAGE
Strongly agree	42	5	210
Agree	27	4	108
LO	17	3	51
Disagree	17	2	34
Strongly disagree	7	1	7
Total	110		410

Source: Primary data

WEIGHTED AVERAGE = ∑FW / ∑F

= 410/ 110

= 3.72

= 4

INFERENCE

It is inferred that majority of the respondents agree with organization developing a plan to achieve quality management.

13. FINDINGS OF THE STUDY

The five parts of the questionnaire had been analyzed well using appropriate tools and the results had been discussed in the body of this paper. The quality environment in the company is needs a makeover. The employees are of the opinion that the top management support is essential and the support extended here is less. The management's commitment towards quality should made clear to the employees so that the employees may not lose their motive towards quality improvement. In general, there is reasonable awareness about the quality concept, their role, and the need for team work, incentives, accountability and review process. There are some employees who are still focused on the volume of sales which determine the success of the company. Though true, the association of quantity with quality should be emphasized throughout the organization.

Education of the employees has a significant influence in consideration of the customer's complaints. Handling customer complaints effectively and avoiding them in the long run would eventually result in quality improvement. The employees are also working hard on the philosophy of "Do it right for the first time". This drives them to avoid scrap and rework there by concentrating on zero errors.

14. SUGGESTIONS

Awareness programmes, sensitization on the new concepts of TQM, effective and periodic training are some aspects which the company should focus on to emerge as a quality champion. The company must publicize the top management support and encourage their employees to strive for better quality. TQM creates impact on organization performance and profitability, so the employees shall be made to realize this and work coherently.

The rewards, recognition and promotion programme should be in place to retain the motivation factor of the employees. Pressure from competitors, increasing demand from the customer, reduction of scrap and rework are additional challenges which the company is currently facing. The internal audit process needs to be strengthened.

15. CONCLUSION

As one of the leading manufacturer of switch Gears, Gunther is working towards its quality policy for a sustainable business, long term profit and corporate image. The initial quality journey is challenging as per this study. The constraints of effective top management support, employee involvement, training, recognition have to be overcome very quickly to achieve its milestones. The review process and the feedback mechanism is in place which would help in overcoming the obstacles. Though the current situation is a good start, a kick start is needed on these aspects to achieve success in the quality front.

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