

PLANNING STRATEGY FOR TOTAL QUALITY MANAGEMENT (An Empirical Study In Select Public And Private Sector Undertakings)

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ABSTRACT

In the present era of rapid changes in the market and economic development characterized by phenomenon such as globalization, deregulation of markets, advancement in technology and intense competition, Total Quality Management (TQM) becomes utmost important in all sectors; it seeks to integrate all organizational functions to focus on meeting and surpassing customers' requirements and ultimately organizational objectives. TQM empowers every member of the organization and offers the opportunity to participate, contribute

and develop a sense of ownership. It is intended to promote continuous, sustained and long term improvement in quality and productivity and eliminate employees' fear of change. TQM is a continuous process of improvement for individuals, group and total organization. It is about changing the way things are done within the organization's lifetime. This article presents a clear picture of Planning as a strategy for effective implementation of TQM in Rashtriya Ispat Nigam Limited (RINL), Visakhapatnam and Rane Engine Valves Limited (REVL), Hyderabad.

KEYWORDS

Planning Strategy, Total Quality Management, Rashtriya Ispat Nigam Limited, Rane Engine Valves Limited.

INTRODUCTION

TQM is a structured system for managing the quality of products, process and resources of an organization in order to satisfy its internal and external customers as well as its suppliers. In today's competitive market the survival of industry is possible only for those organizations, which have balanced both quality at low cost and productivity. The growth of organizations is possible only when the organizations implant culture of quality with continuous orientation towards improvement of people, process, products and customers. Today we are in the midst of the 'quality revolution' a period of change affecting every type of business, enterprise, organization and society. The initiatives taken by the government in revamping the fiscal and industrial policies have opened up the doors for real competition; this is likely to accelerate further in the future.

In any competitive economy, continuous cost reduction and quality improvements are essential if an organization is to ensure enduring continuity. Competitiveness is measured by three parameters- 'quality', 'price' and 'delivery'. The word 'quality' is often used to satisfy customers. It signifies 'excellence' of a product or service. Quality is the total composite product and service characteristics of engineering, manufacturing, maintenance and marketing, through which the product and service in use will meet the expectations of the ultimate customer.

'Quality' is a relative term to everyone which has a variety of uses and meanings. The classic perception of quality is the position of a product attribute on a good or bad scale; generally used with reference to the end use of a product. Quality relates not only to the product but also to the instructions for its use, to installations, to service, to marketing and so on. Quality should be aimed at the needs of the customer, present and future (*Edwards W. Deming, 1986*).

TQM has been defined by various 'Quality Gurus' (Deming, Crosby, Juran) in various ways as a search for excellence, creating the right attitudes and controls to make the prevention of defectives as far as possible and optimise customer satisfaction by increased efficiency and business effectiveness.

Oakland (1989) defined TQM as "TQM is an approach to improving the effectiveness and flexibility of business as a whole. It is essentially a way of organising and involving the effectiveness and flexibility of business as a whole, every department, every activity, every single person at every level". TQM has been defined in a way to suit the organizational needs. TQM is a systematic approach to implement a lasting change in an organization through the use of i) teamwork and participation, ii) satisfied methods and analysis, iii) management leadership and problem solving. *Tobin (1990)* views TQM as the totally integrated efforts for gaining competitive advantage by continuously improving every facet of organizational culture.

Atkinson (1991) states that, "TQM is a strategic approach to produce the best product and service possible through constant innovation." According to *Price and Chen (1993)* TQM is a management system, not a series of programs that puts customer satisfaction before profit. It is a system that comprises of a set of integrated philosophies, tools and processes used to accomplish business objectives by creating delighted and happy employees.

NEED FOR THE STUDY

TQM principles and practices have been embraced by many quality managers and practitioners from different sectors and have earned the attention of many researchers from diverse areas. They come out with many success stories related to TQM practices, while many studies have shown that almost two-third of the TQM implementation program succeeded to achieve results and others find mixed results of TQM success. These findings pose the question as to what factors contribute to TQM success. In particular, the importance of identification of key TQM practices and their successful implementation is frequently referred in the existing literature, however many authors strongly argue that performance measurement and effective leadership are the most important dimensions of TQM's success.

In the light of these results, there is a need for a deeper investigation on the planning strategy for TQM Implementation in the organizations. Therefore, there is a need for study of its kind: i) to understand the TQM practices in Rashtriya Ispat Nigam Limited (RINL), Visakhapatnam and Rane Engine Valves Limited (REVL), Hyderabad; and ii) to assess the implementation of planning strategy for TQM to improve the total customer satisfaction.

PROFILE OF THE SELECTED ORGANIZATIONS

For the present study two organizations viz., Rashtriya Ispat Nigam Limited (RINL), Visakhapatnam and Rane Engine Valves Limited (REVL), Hyderabad, have been selected. RINL is a Navaratna Public Sector Enterprise (PSE) with 100 percent ownership of Government of India and the corporate entity of

Visakhapatnam Steel Plant. India's first shore based integrated steel plant, located at Visakhapatnam, with the production capacity of 6.3MT, in line with its mission of expanding to 20MT. A pioneer in the steel industry in adoption of system standards and TQM; RINL is accredited for all three quality system standards i.e. ISO 9001:2000, ISO 14001:2000 and OHSAS 18001:2007 and is the first Indian steel plant certified with "Capability Maturity Model Integrated (CMMI) Level-3 certification for its implementation of IT systems in 2010-11.

Rane Engine Valve Limited is a part of Rane Group of companies involved in the manufacture of valves and valve train components for various engine applications. Incepted in the year 1959, it is one of the oldest engine valve manufacturers that cater in the auto industry. The company is headquartered in Chennai and has five manufacturing locations with 2 plants in Chennai, 2 in Hyderabad and a plant in Tiruchirapalli. It is the largest manufacturer of engine valves in India with an 85% market share. The company offers its products to companies engaged in the manufacture of passenger cars, utility vehicles, light commercial vehicles, medium and heavy commercial vehicles, farm tractors, and two and three wheelers. The major customers of the company include Maruti Suzuki, Tata, Mahindra, Hyundai, Yamaha, Volkswagen, Deutz. It recently inaugurated its dedicated Lean Manufacturing Practices (LPS) line for Mahindra and Mahindra's Farm Equipment Sector in its Chennai plant. It also has a dedicated line for manufacturing valves for kappa engines of Hyundai motor. It is one of the leading groups in South India. It is a major original equipment supplier, and a market leader in manufacturing of automobile components. In addition to domestic market leadership it also entered into export business. Rane has adopted TQM as a way of life by identifying areas where significant value can be added or improvement from customers' perspective is needed.

PLANNING STRATEGY FOR TQM IMPLEMENTATION

Implementation of Planning in company's TQM approach requires analysing and evaluating the needs of customers to determine the best approach that meets organizations creating value for consumers. The organizations must make quality a top priority for everyone in the company from top managers to workers building products. Planning is a process, an organization uses to prioritise and focus the efforts of the company while implementation of a plan. A company uses strategic planning to predict and anticipate changes in the business event and position the company to respond. Companies must develop an edge in the market place that differentiates the organization from all other businesses.

The goals and objectives of a company defined for a quality management system have to be clear, achievable and measurable. A clear goal is one that addresses a specific objective from the companies' strategic plan. It includes details of what employees have to do to achieve it. To let the employees determine when the company has reached its goal, the goal must have measurable characteristics that indicate how much progress is required and when the company has fulfilled its objectives.

Companies large and small implement quality management systems to improve performance and increase customer satisfaction with the companies' products and services. To be effective, implementation of such a system must have specific objectives related to the company's overall strategic goals. When business defines goals clearly it can identify the tasks and characteristics that allow it to achieve its targets. Through the quality management system, it can specify tests and measurements that identify problems and help improve output quality to better meet the needs of its customers.

Concrete goals are needed to provide focus, such as improve customer satisfaction, employee satisfaction, and processes. Goals can force changes in leadership style from reward and punishment to identifying and improving system problems. Goals must be specific and understandable, using concrete results rather than behaviours or attitudes. The most important characteristic of goals is that they be measurable; only measurable goals can be evaluated. In addition to the core values and concepts, the quality statements include the vision, mission statements, and quality policy. Once developed, they are only

occasionally reviewed and updated. They are part of the strategic planning process. The utilization of these statements varies considerably from organization to organization. In fact, small organizations may use only the quality policy statement. Additionally, there may be considerable overlap among the statements.

OBJECTIVES OF THE STUDY

The study focuses on executives during effective implementation of Planning Strategy for TQM in both the organizations. The following are the objectives of the study:

- 1) To understand the importance of TQM and its implementation in Rashtriya Ispat Nigam Limited (RINL), Visakhapatnam and Rane Engine Valves Limited (REVL), Hyderabad ;
- 2) To highlight the implementation of Planning Strategy for TQM, and to find out how the planning can propel towards overall business performance of RINL and REVL;
- 3) To offer suggestions to improve different aspects of TQM and its implementation in the organizations under study in particular and other organizations in general.

HYPOTHESES

Based on the objectives of the study, the following hypotheses were formulated:

- 1) There are significant responses of respondents on Planning Strategy for TQM which can propel towards overall business performance of RINL and REVL.
- 2) There are significant responses of respondents on achievement of increased business performance and total customer satisfaction with planning strategy in RINL and REVL.

RESEARCH DESIGN

The study involved a great deal of preparation and planning in order to conduct the study systematically so as to obtain reliable data to draw meaningful conclusions and construct suggestions based on the findings of the study.

SAMPLE SELECTION

The sample size from both the organizations together is 370 respondents covering all the categories of executives/managers/officers. *Stratified random sampling* method was followed; among the total number of respondents 250 respondents from RINL, Visakhapatnam and 120 respondents from REVL, Hyderabad. The details of the categories and sample size are presented in Table 1.

Table 1
Sample Size

S. No.	Category	No. of Respondents		Total	Percentage
		RINL	REVL		
1	General Manager	8 (3.2)	3(2.5)	11	3.0
2	Deputy General Manager	12(4.8)	5(4.2)	17	4.6
3	Assistant General Manager	15(6.0)	10(8.3)	25	6.8
4	Chief Manager	19(7.6)	0(0)	19	5.1
5	Manager	23(9.2)	20(16.7)	43	11.6
6	Deputy Manager	38(15.2)	13(10.8)	51	13.8
7	Assistant Manager	43(17.2)	17(14.2)	60	16.2
8	Senior Officer	58(23.2)	28(23.3)	86	23.2
9	Junior Officer	34(13.6)	24(24.0)	58	15.7
Total		250 (100.0)	120 (100.0)	370	100.0

Figures in parentheses indicates percentage

TOOLS FOR DATA COLLECTION

Interview schedule had been used as an important tool for collection of data for the present study from the respondents in sample units. The purpose of this research is to know the responses and perceptions of the respondents towards various aspects relating to implementation of planning strategy for Total Quality Management.

DATA COLLECTION

Collection of reliable and meaningful data is crucial step in the entire research process. Data is collected both from primary and secondary sources. The primary sources of data for the study are being collected with the help of structured interview schedule. The interview schedule has been distributed among selected sample respondents of the selected organizations for the study. The statements and concepts have been explained by the researcher personally in order to ensure the collection of required data. Secondary data for the study include official records, brochures, booklets, journals and other published and unpublished material relevant to the study.

DATA ANALYSIS AND INTERPRETATION

The enquiry is essentially in the nature of a qualitative study. As such it involves analysis and description of the features of TQM, and the methods which influenced the management and employees for improvement of quality; internal and external customer satisfaction. Statistical techniques like Mean, Standard Deviation, the Student t-test, and P-value (Statistical Package for Social Sciences), tabular and diagrammatic presentation have been used wherever necessary to lend more precision and systematisation to the data.

T-TEST FOR PLANNING STRATEGY FOR TQM & ITS SIGNIFICANCE LEVEL

Planning for TQM is measured by the elements in Table 2; it shows the distribution of the organizations RINL and REVL according to the opinions given by the respondents on the independent sample test for planning of TQM. Planning includes the following elements: Gathering and reviewing data from its customers, employees and processes; alignment of TQM data with business issues and organizational priorities; communication of feedback trends to stakeholders; to develop short term goals and long term TQM objectives; accountability for implementing the TQM plan; development ways to measure the success of TQM implementation; revisit of TQM plan to identify needed changes and document results.

The above mentioned elements of planning were tested with mean, standard deviation and their significance level is found out with calculated P-value. Overall mean score of respondents of RINL and REVL is also calculated to find out considered performance on five point scale. In each question null hypothesis denotes that mean response for both organizations is equal and alternative hypothesis denotes that the mean response is different for both organizations.

**Table 2 Independent Sample Test
T-test for equality of means on Planning for TQM and its significance level**

Q. No.	Implementation of Planning Strategy for TQM	Name of the Organization						p-Value	Null Hypothesis
		Rashtriya Ispat Nigam Ltd, Visakhapatnam			Rane Engine Valves Ltd, Hyderabad				
		N	Mean	S.D	N	Mean	S.D		
Q1	How effectively organizations gather and review data from customers?	248	3.50	0.815	120	3.33	1.103	0.133	Not Significant
Q2	How effectively organizations gather and review data from employees?	248	3.31	0.814	119	3.50	0.852	0.040	Significant
Q3	How effectively organizations gather and review on processes?	245	3.31	0.847	120	3.54	0.798	0.010	Significant
Q4	How effectively organizations align TQM data with business issues and organizational priorities?	240	3.33	0.821	119	3.54	1.023	0.054	Not Significant
Q5	How effectively organizations feedback trends to key stakeholders?	234	3.20	0.871	119	3.26	0.786	0.501	Not Significant
Q6	How effectively organizations develop a plan to achieve short term TQM goals?	237	3.40	0.945	120	3.60	0.834	0.051	Not Significant
Q7	How effectively organizations develop a plan to achieve long term TQM objectives?	244	3.42	0.859	120	3.58	0.785	0.093	Not Significant
Q8	How effectively organizations assign accountability for implementing the TQM plan?	242	3.41	0.903	120	3.61	0.882	0.047	Significant
Q9	How effectively organizations establish ways to measure the success of TQM implementation?	244	3.43	0.870	119	3.53	0.757	0.289	Not Significant
Q10	How effectively organizations revisit the TQM plan to identify needed changes and document results?	246	3.29	0.877	118	3.25	0.786	0.718	Not Significant
Overall Mean and S.D Scores			3.36	0.86		3.47	0.86		

FINDINGS OF THE STUDY

Planning is a process, organizations use to prioritise and focus the efforts of the company as well as the implementation of a plan successfully. RINL and REVL have formulated the strategic plans to predict and anticipate changes, challenges in the business event and position of the companies to respond accordingly.

RINL and REVL have developed an edge in the market place that differentiates the organizations from all other businesses. The following findings on planning module of TQM are obtained from the study.

The mean score represents the numerical average for a set of responses. The standard deviation represents the distribution of the responses around the mean. It indicates the degree of consistency among responses of the respondents. Table 2 shows that the overall standard deviation scores of the respondents of the RINL and REVL are 0.86 and 0.86 respectively. A small standard deviation means that most of the respondents' scores fell close to the mean whereas large standard deviation means that the scores were spread out.

1) Regarding the effectiveness of organizations in gathering and review of data from customers, t-test P-value (0.133) is more than 0.05, it reveals the acceptance of null hypothesis and rejection of alternative hypothesis. It also shows that there is no significance of responses on effectiveness of organizations in gathering and review of data from customers in RINL and REVL.

2) Relating to effectiveness of organizations in gathering and review data from employees, t-test P-value (0.040) is less than 0.05, it reveals the rejection of null hypothesis and acceptance of the alternative hypothesis which shows significance of responses on effectiveness of organizations in gathering and review of data from employees in the two organizations.

3) Relating to the effectiveness of organizations in gathering and review of data on process as t-test P-value (0.010) is less than 0.05, the null hypothesis is rejected and acceptance of the alternative hypothesis. It shows significance of responses on effectiveness of organizations in gathering and review of data on their processes in RINL and REVL.

4) About the effectiveness of organizations to align TQM data with business issues, t-test P-value (0.054) is more than 0.05, It reveals the acceptance of null hypotheses and rejection of alternative hypothesis. It shows no significance of responses on effectiveness of organizations to align TQM data with business issues and organizational priorities in two organizations.

5) Regarding the effectiveness of feedback trends communicated to key stakeholders done by the organizations, t-test P-value (0.501), is more than 0.05 so the null hypothesis is accepted and alternate hypothesis is rejected which shows no significance of responses on effective communication of the feedback trends to stakeholders in both the organizations.

6) About the effectiveness of organizations to develop a plan to achieve short term TQM goals, t-test P-value (0.155) is more than 0.05, it reveals the acceptance of null hypothesis and alternate hypothesis is rejected which shows no significance of responses on effectiveness of the organizations in developing a plan to achieve short term TQM in two organizations.

7) Regarding the effectiveness of organizations in developing a plan to achieve long term TQM objectives, as t-test P-value (0.093) is more than 0.05, null hypothesis is accepted and alternate hypothesis is rejected which shows no significance of responses on effectiveness of the organizations in developing a plan to achieve long term TQM objectives in both organizations.

8) About effectiveness of organizations in assigning accountability for implementing TQM plan, as t-test P-value (0.047) is less than 0.05, there is sufficient evidence to reject the null hypothesis and accept alternative hypothesis. It shows significance of responses on effectiveness of organizations in assigning accountability for implementing TQM plans in RINL and REVL.

9) Regarding the effectiveness of organizations in developing ways to measure success of TQM implementation, t-test P-value (0.289) is more than 0.05 so there is insufficient evidence to reject the null hypothesis and acceptance of alternative hypothesis which shows that there is no significant response on effectiveness of organizations in developing ways to measure success of TQM in RINL and REVL.

10) Regarding effectiveness of organizations in revisiting the TQM plan to identify needed changes and document results, t-test P-value (0.718) is more than 0.05. Thus, there is insufficient evidence to reject the

null hypothesis and acceptance of alternative hypothesis which shows no significance of responses on effectiveness of organizations in revisiting TQM plan to identify needed changes and document results in two organizations.

Based on the mean scores and standard deviation calculated for each question and for overall module it can be concluded that most of the respondents of RINL and REVL expressed that implementation of TQM with regard to Planning module is done well in both the organizations.

SUGGESTIONS

Based on the findings of the study, the following suggestions are offered by the researcher for betterment of implementation of Planning Strategy for TQM practices in particular RINL and REVL and other organisations in general.

- 1) The customer ultimately determines the level of quality. No matter what an organization does to foster quality improvement, the customer determines whether the efforts were worthwhile. Hence, the organizations need to improve on the efforts to gather and review data from customers so as to accommodate their views for quality improvement (Question No.1).
- 2) The core feature of TQM on which improvement efforts are based on data based decision making. For effective implementation of TQM, data have to be aligned with business issues and organization priorities which are the values that further guide the organization in its enduring journey (Question No.4).
- 3) Feedback system has an important place in the process of the organizations and has a strong mutual impact in quality management. Organizations need to focus on responsible stakeholder communication and feedback. It is no longer sufficient to simply promote and profound the development of stakeholder communication. Stakeholder communication cannot be realistically considered in isolation from wider issues of organizational relationships, identity and meaning (Question No.5).
- 4) Technical goals are short-range, whereas strategies are long-term goals. Broad goals don't lead to results so they are to be identified. Hence, the organizations RINL and REVL have to develop a plan to achieve short-term TQM goals also (Question No.6).
- 5) For organizations to effectively develop a plan to achieve long term TQM objectives, everyone must understand the vision, mission and guiding principles as well as the quality policies, objectives and critical processes of the organizations. Business performance must be monitored and communicated continuously (Question No.7).
- 6) Measuring the success of TQM implementation is important to know whether the efforts put into implementing TQM is really worthwhile. One of the ways to evaluate the TQM success is to adopt a holistic approach of assessing organizations with models like 'Malcolm Baldrige National Quality Award' assessment approach. This is a national award system in the US to recognise organizations for achieving excellence in their respective businesses (Question No.9).
- 7) The organizations need to revisit the TQM plan to determine the performance and then projecting future performance levels. What is required from this plan is a comprehensive understanding of 'why' of the performance gap. When the 'why' is understood, then it becomes possibly improve on that level (Question No.10).

CONCLUSION

Planning is a process, an organization uses to prioritise and focus the efforts of the company on the implementation of a plan. The TQM practice process begins with planning at every phase of TQM implementation. A company uses planning to predict and anticipate changes in the business event and position the company to respond. Companies must develop an edge in the market place that differentiates the organization from all other businesses. Once a plan is developed for TQM implementation, it should be

communicated and the key elements affecting quality be understood.

Each element in TQM practices improves different aspects of firm performance. It is designed to bring about radical changes in attitudes, structures, practices and systems. TQM consists of a well defined role for various categories of employees' appropriate tools to deploy, organizational structure conducive to close coordination, communication and cooperation among employees. TQM environment favours direct communication to obviate delay in action and resultant stoppages or breakdowns. TQM presently an ongoing process can become the lifestyle of organizations with appropriate planning strategy.

REFERENCES

1. Atkinson, P.E (1991), *Creating Culture Change: The Key to Total Quality Management*, IFS Publications.
2. Crosby P.B (1979), *Quality is Free: The Art of Making Quality Certain*, New York, McGraw-Hill.
3. Edwards Deming W (1986), *Out of Crisis*, Massachusetts Institute of Technology, Cambridge, MA, Centre for Advanced Engineering Study.
4. Feigenbaum A. V (1991), *Total Quality Control: Engineering and Management*, New York, 3rd Edition, McGraw-Hill, Inc.
5. Foster, R.A (1992), A Crisis in health care, *Quality Progress*, Vol.25, (5), pp67-69.
6. Flynn B. B, Schroeder R. G and Sakakibara S (1995), "The impact of Quality Management Practices on Performance and Competitive Advantage", *Decision Sciences*, Vol. 26 No.5, pp 659-691.
7. Ishikawa K (1985), *What is Total Quality Control? The Japanese Way*, London, Prentice-Hall.
8. Juran J.M (1974), *Quality Control Hand Book*, McGraw Hill, London.
9. Juran J.M and Gryna F.M (1993), *Quality Planning and Analysis*, 3rd Ed., New York, McGraw-Hill.
10. Oakland J.S (1989), *Total Quality Management: The Route to Improving Performance*, Butterworth Oxford, London, Heinemann Professional.
11. Oakland J.S (2000), *TQM, Text with Cases*, 2nd Ed., London, Oxford, London, Butter Worth-Heinemann Professional
12. Price M.J and Chen, E.E (1993), Total Quality Management in a Small and High Technology Company, *California Management Review*, Spring, pp 96-117.
13. Tobin (1990), The New Quality Landscape: TQM, *International Journal of Systems Management*, Vol.412, Issue11, pp 10-14.