

RESOURCE PAPER - 26



INDO-JAPAN CHAMBER OF COMMERCE & INDUSTRY

Practitioner's Guide on TQM

by
N. Hari Babu



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PREFACE

Dear Readers,

‘Quality’ is the mantra in today’s business. There is an invasion of foreign companies in India in both manufacturing and service sectors in recent years. To explore new avenues, sustain the market and expand globally, organisations require to be wedded to quality. I am extremely happy to present to the readers a Resource Paper on TQM. The author has presented the essence of TQM very comprehensively, adequate enough to be motivated and get started in the journey.

Author, Mr. N. Hari Babu is an Engineering Graduate with specialization in Industrial Engineering, with a Six Sigma Black Belt; a Certified Behavior Analyst, a Lead Auditor in SA 8000 etc. carrying with him around four decades of a wealth of experience. Mr. Hari Babu is the Advisor - Business Excellence - TQM and L&D at the Rane Holdings Ltd., the Holding Company of Rane Group. He had both extensive and intensive training under a number of eminent Japanese experts in this field.

Headquartered in Chennai, India, Rane Group is engaged primarily in manufacturing auto components for well over five decades. Through its group companies, it manufactures variety of products that cater to every segment in the automotive sector. It has carved a niche for itself in the automotive industry, is a pride of Chennai, conferred with five Deming Prizes and three Deming Grand Prizes, worth sharing with the readers: Deming Prize –Rane Brake Lining Ltd. (2003); Rane Engine Valve Ltd. (2005); Rane TRW Steering Systems (2005); Rane (Madras) Ltd. (2007); Rane NSK Steering Systems (2018) and the Deming Grand Prize - Rane TRW Steering Systems Ltd. (2011); Rane (Madras) Ltd. (2012) and Rane Brake Lining Ltd. (2013).

Mr. Hari Babu with his first hand experience has brought out the essence of TQM vividly. I am confident that our readers will find this Resource Paper on Practitioner’s Guide on TQM highly useful in their quality journey.

5th September 2019

Suguna Ramamoorthy
Secretary General

Practitioner's Guide on TQM

Background

Japanese Union of Scientists and Engineers (JUSE) defines Total Quality Management (TQM) as a set of systematic activities carried out by the entire organization to effectively and efficiently achieve company objectives so as to provide products and services with a level of quality that satisfies customers, at the appropriate time and price. The practices of TQM were taught to the world by Japan, which drove the Quality revolution through the methods introduced by Edwards Deming and captured global attention on automotive and electronics manufacturing.

The US and the European countries started adopting TQM in the 1980s and 1990s. Though India was a late starter to TQM, India has the largest number of companies with Deming Awards outside Japan. India's liberalization in 1991 was premised on the idea that it would make local industries more competitive, helping them capture world markets, which in turn would enable millions of Indian workers to move away from low-productivity farm jobs to high-productivity factory jobs. In a significantly altered India's economic and competitive scenario post liberalization in 1991, many Indian companies were also open to global competition in India. To remain competitive in India and at global level, many Indian companies particularly manufacturing companies took various initiatives.

The Companies had dallied with the thought of trying out western approaches such as strategic planning and process engineering, but they were all top-driven and seemed to create a huge disconnect between the corporate office and the shop floor. Every initiative seemed more like a slogan kept failing. TQM, on the other hand, was able to synchronize the organization well, providing a unified direction, towards common measures. It allotted clear responsibilities. It becomes very visible right across the organization. ‘Six sigma’ and ‘Kaizen’ are all the outcome of TQM, closely integrated to the process.

A Few Myths on TQM

TQM is only for the Japanese companies

Initially, people thought that TQM can be implemented only by Japanese companies and the ‘Deming Awards’ can be won only by Japanese companies. Thanks to Japanese senseis (Mentors), many of our Indian companies have been able to implement TQM successfully and also win Deming Prize and Deming Grand Prize.

Deming Prize Winners by Countries		Deming Grand Prize Winners by Countries	
Country	DP Winners	Country	DGP Winners
Japan	197	Japan	18
India	32	India	8
Thailand	12	Thailand	2
U.S.A.	4	Taiwan	1
Taiwan	2	Total	29
China	3		
Singapore	1		
Indonesia	1		
Total	252		

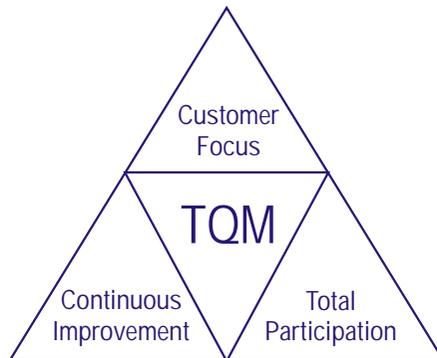
TQM is only for manufacturing companies

TQM is for Business and the principles doesn't differentiate industries or sectors. Sustained implementation would facilitate achieving business goals by design. Service organizations have also realized the importance of implementing TQM. In 2018, Indus Towers Limited (India) won the Deming Prize.

TQM is only for large enterprises

TQM can be practiced by organization of any size. These are principles and concepts that can be applied to organization as a whole or even to select business segment, location etc. For medium scale industries, the possibility of cluster approach to understanding the basics of TQM through senseis could be explored. Primary objective is to put robust systems and processes in place and track their implementation and take appropriate mid-course correction/counter measures. The approach has to be on implementing TQM, and challenging Deming Award can be figured out as the TQM journey evolves and not in the initial stage itself.

Essence of TQM



Principles of TQM

Customer Focus - Identify and understand your customer.

Process Orientation- Sequence of activities (Input - Process - Output).

Continuous Improvement -Improve way of doing.

Systematic, structured method to identify & solve problems - Data based, use of statistical tools.

Company-wide - Involvement of everyone.

Characteristics of TQM

Well trained, appropriately empowered employees driving processes (QCCs - Quality Control Circles, QITs - Quality Improvement Teams & CFTs - Cross Functional Teams).

Standard Operating Procedures which enable repeatability of processes and continuous improvements.

Customer (internal and external) drive processes.

Daily Routine Management (DRM) which provides stable output and real time control.

Policy Deployment which targets break through improvements.

Fact-based decision making using statistical thinking.

Extensive company-wide communication.

The fundamental philosophy of TQM is that any process left unmanaged will deteriorate. Attending to every process daily will take two minutes, but if left unattended, can go out of control and need months and years to fix it. So the first principle is, let unmanaged processes deteriorate. The second principle is, there is no end to improvement.

Experiences from TQM Implementation

The TQM journey has thrown up challenges such as how to create a unified management structure or an implementation structure for TQM. There was an initial resistance too, especially from the management, as they felt TQM was an additional responsibility. It needed efforts to convince that TQM is a tool to discharge the current responsibilities better.

How Japanese Senseis helped Indian organisations on TQM

Japanese senseis are the teachers who inculcate the way in which the Japanese companies implemented TQM to deliver superior quality and help companies become global players. Many learned Japanese senseis have been guiding Indian organizations on the understanding and the implementation of TQM practices. They make periodic visits to ascertain the level of understanding and implementation. When they visit organizations, they understand and assimilate the improvement activities implemented in detail and offer suggestions, ask specific questions in order to examine whether the improvement activities have been carried out systematically using appropriate problem-solving tools. They also visit shop floor to examine 5s and DRM practices followed as a system, evaluating the improvement activities at 'gemba'. QCC and QIT projects are presented to the senseis for their valuable inputs. Before they leave, a lot of homework is given to the teams from all functions with specific timelines. There is a lot of rigor and thoroughness that go into the learning sessions. At appropriate times awareness sessions on different themes like strategy formulation, policy deployment and DRM practices are provided to the employees. Methodical approach is followed to facilitate employees to enhance their quality of thinking.

Organizational unification

The teams realized the importance of deploying TQM practices while carrying out their roles and responsibilities and how these have really helped in not only sustaining but also rapidly ramping up the business. One of the most significant benefits has been the extent of customer focus with an intent of understanding their requirements thoroughly and responding to their queries and pain points swiftly. Through this, the team has been able to create confidence in customers of the ability to meet their tough requirements as per timelines. TQM has brought an organizational alignment leading to a unified power for the organization.

Another important aspect of our practice stems from the need to look at the process and the outcome of the intended result. A case in point is our consistent approach of younger leaders seeking the advice without any fear and proceeding with the guidance to achieve the result as perceived by the customers.

Critical learnings from TQM journey

Daily Routine Management (DRM)

DRM is diligently performed with the objective of ensuring stability of the achievements as per targets, effecting continuous improvements through appropriate review frequencies and preferably real time control. The status of actual figures achieved is compared with the targets. Gaps are analyzed using why-why analysis and other tools to identify root causes and appropriate counter measures are implemented. The power of DRM will be realized during the course of implementing TQM principles and practices.

Standard Operating Procedure (SOP)

In the initial days of interactions, lead sensei helped realize the importance of SOPs, which was a very basic requirement. We could see that within the organization no particular task was done the same way and there were no clear documents on how the tasks are to be performed. The sensei taught us that if we do not get the desired results, we must look at the SOPs and revise them to obtain the desired results. SOPs must very clearly indicate what, why and how of actions with visuals, wherever needed, in the local language. It is important to review the SOPs periodically and effect improvements. SOPs are the stepping stones for continuous improvements. History of amendments made indicating what, why, how and when these were made. Needless to say that SOPs are sacrosanct documents that must be religiously followed till they are improved and so on. Concept of ‘how’ and ‘why’ SOPs have to be made dynamic to completely change the thinking and result in reinventing the business strategies in the later period. This learning will help companies by re-examining the strategies to achieve the desired business results.

Plan-Do-Check-ACT (PDCA)

A problem was allowed to occur once, but never again, meaning that our recurrence prevention processes must be very strong. This philosophy helped to unearth and build the transparency in problem- escalation through the “PDCA” process and practice the same in spirit. This brought a transparent culture, where the problems transformed the perception, paved way for improvement opportunities.

Total Employee Engagement (TEE)

The crux of TQM transformation is TEE. Employees are encouraged to give suggestions, involve themselves in QCC and QIT voluntarily. It enabled continuous engagement of all in organizational objectives in the minds of every employee in the organization. Sensei reviews many QCCs and QITs and shares the comments which adds new perspectives. QCCs and QITs are expected to follow systematic problem-solving approaches like QC Story. While adopting QC Story methodology, applicable problem-solving tools such as 7QC Tools, Statistical Process Control, higher level statistical tools like Multiple Regression Analysis (MRA), Design of Experiments (DOE) are often adopted, facilitating improvements in problem-solving abilities. Employees are encouraged to work on higher order problems that necessitate acquiring higher order problem solving tools. In the process, the employees also take the assistance of consultants to guide them. Employees are motivated through QC and QIT Conventions in which teams present their best projects to external Jury and top teams are suitably rewarded with cash prizes and trophies. Employees take pride in the participation. These projects span across Quality, Safety, Productivity etc. and enable the processes being viewed from various perspectives.

TQM was a far-reaching organization-wide exercise. Creating appropriate structures and systems is vital so that the TQM learnings could be assimilated in a central pool and could be spread across the functions, business units and the group. Policy Management to clearly communicate company policy and objectives across the organization and ensure that such policies cascade down to each and every job holder in the organization.

This enabled strong company-wide alignment towards Vision, Goals, Strategies and Strategic Initiatives.

Our Reviews and Diagnosis have helped us to quickly course correct, identify and implement systemic counter measures.

Humility

TQM teaches humility; every employee in the organization was willing to learn. Experienced managers were open to learn from Sensei.

Perseverance

Perseverance is required in any pursuit of excellence. TQM is no different. It has been a long journey of 19 years at Rane since embracing TQM. There have been significant ups and downs in the market environment but the TQM is practiced in steadfast manner and it has become the way of life.

Training

Training will play an important role in bringing employees up to the required speed. Training should be bifurcated into white collar training and non-white collar training. All employees should undergo training at one point or the other during the initial TQM implementation. In fact, having a policy such as 2 percent of the working days must be spent on training, will help in constant upgradation of skillset. These training programs should be delivered using in-house practitioners and experts for enhancing the skill level. For certain programs, external training can be leveraged, either the employees can be sent for external training or the faculty visiting the plants for training.

All the new entrants at all levels go through an initial three-day training. Based on our experience, we have structured the training as below:

Day1: Basics of TQM, Policy Deployment, DRM practices, significance of SOPs, PDCA rotation and Business Excellence Model and its implementation.

Day2: Systematic Problem Solving using QC Story Methodology, 7QC Tools and New 7 QC Tools.

Day 3: Statistical thinking with basics of statistics. Subsequently, refresher programs and hand-holding sessions are held to facilitate better understanding and effective implementation.

Sustenance of TQM

Sustenance of TQM Practices for achieving business objectives is extremely important. Otherwise, performance can slide in to time. Companies adopt multiple practices including periodic audits that highlight good practices and areas of improvement.

Based on our experience, we have established Business Excellence Council comprising Chairman, Vice Chairman, all Business Heads and other Senior leaders. Businesses are audited by this council every 18-24 months. These are two-day audit comprising of 'Schedule A' presentations on shining examples and 'Schedule B' Audits of all Corporate Functions and Plant Departments. The entire senior management of the business is involved in the audits. Pitstops also are part of the audit process. Improvements made are explained by the operators at gemba with 60-70% time spent on live

demonstration in the manufacturing lines and other locations such as scrap yard etc. A candid feedback is given that helps business units to take the necessary actions. There is a deep involvement of all the employees in the audit process. The status of actions implemented is regularly reviewed by the Business Heads and by Chairman on a quarterly basis. To prepare businesses for this audit, the business unit internally runs various functional audits.

TQM is a Journey

TQM is a journey and not an end in itself. It is an arduous journey with no shortcuts. One must have patience, perseverance and rigor while implementing TQM. It takes 3 to 5 years of sustained implementation for an organization to be ready to challenge Deming Prize. The endeavour is to pursue TQM journey and keep reinventing through systemic PDCA's. TQM way of thinking is sustained or rather strengthened even after many years of challenging Deming and Deming Grand Prize. This manifests that TQM is a way of life in the organization and this will help to move ahead and expand horizons.

It has been our conviction that TQM way of thinking and working would bring in a shift in culture and effecting the counter measures for improving business. While we do recommend that organizations would reap benefits by understanding and implementing TQM, they need to decide the approach that would be suitable to their respective businesses.

Deming Prize

The Deming Prize is an annual award presented to an organization that has implemented TQM suitable for its

management philosophy, scope/type/scale of business, and management environment. Regardless of the types of business, any organization can apply for the Prize under certain conditions, be it public or private, large or small, domestic or overseas, or part of or entire organization.

Deming Grand Prize

The Deming Grand Prize is an annual award presented to an organization such as a company, an institute, a division of a company and a headquarters office (organization) that received the Deming Prize (including the former Deming Application Prize, Deming Application Prize for Small Companies, the Deming Application Prize for Divisions and the Quality Control Award for Operations Business Units) three or more years ago (counting January to December of the award year as one year), that has continuously applied TQM to priority issues and has been achieving its objectives steadily and effectively in a changing business environment.

Examples of these activities include quality creation, employee satisfaction improvement, environmental initiatives and international and social contributions. Such activities, however, are not required for the examination. If the applicant organization has them and chooses to include them, then they become subjects for evaluation. An organization that wins the Deming Grand Prize is presented with the Certificate of Merit and the Deming Grand Prize Medal. The examination for the Deming Grand Prize is conducted by the Deming Prize Examination Committee and the decision of award is made by the Deming Prize Committee.

Major examination requirements that differentiate the Deming Grand Prize from the Deming Prize :

- (1) Examination unit is one as a rule.
- (2) Examination is conducted by six examiners as a rule.
- (3) Examination can be carried out flexibly.
- (4) Passing points is 75 or above while that of the Deming Prize is 70 or above.

The Deming Prize and development of Quality Control Management in Japan

The Deming Prize examination does not require applicants to conform to a model provided by the Deming Prize Committee. Rather, the applicants are expected to understand their current situation, establish their own themes and objectives and improve and transform themselves organization-wide. Not only the results achieved and the processes used, but also the effectiveness expected in the future are subjects for the examination. To the best of their abilities, the examiners evaluate whether or not the themes established by the applicants were commensurate to their situation; whether or not their activities were suitable to their circumstance and whether or not their activities are likely to achieve their higher objectives in the future.

How to Prepare for the Deming Prize Examination

Deepen understanding of TQM and boost the morale of employees across the organization for TQM implementation and promotion

It will be helpful to have top management participate in the quality related conferences and lectures in order to learn winner's experiences, deepen understanding of TQM and know their beliefs. Visit other companies that have made achievements by implementing TQM and observe their TQM practices first-hand. Inspire managers, site supervisor and employees by letting them participate in external quality conferences and QC Circle Conventions to learn other company's cases. It is also effective to have TQM experts carry out QC diagnosis at your company.

Create a structure to advance TQM and set up a TQM promotion plan

Organizing a TQM promotion body in a central part of your company is a good way to start implementing TQM. Depending on the progress, plants and business units should also have a downsized version of the TQM promotion body. Should also have its subordinate bodies such as QC Circle promotion committee and committees by such functions as quality assurance, cost management and production management etc. that are related to Q, C, D, S, M, E.

Provide education on quality management

Raise employees' interest in quality and let them understand what quality management is about and how to manage it. To gain understanding of statistical way of thinking and methods, provide in-house training as well as an opportunity to participate in the external training programs considering employees' work duties and positions. Depending on the progress, carry out suitable On the Job Training (OJP), deepen relationship with

other companies and present cases at an external conferences. To involve affiliate companies and business partners in education is also encouraged.

Identify issues and make improvements

Clarify high priority and urgent issues such as quality enhancement, cost reduction and securing of production and order volume. Set a numerical target and work towards achieving the target by functional groups and teams. At the same time, review the new product development system, quality assurance system and responsibilities of each position. Improve the management systems by setting management items.

Start from an in-house QC diagnosis and move on to achieve higher goals

It is crucial to carry out QC diagnosis by top management not only to motivate employees but also as a way to develop a person in charge of QC activity and check if the top management policy is being followed. If a company achieves certain level of excellence in terms of QC, it should take a step forward and aim for higher goals to further enrich its business activity.

Apply for Deming Prize

To carry out TQM Diagnosis in advance by the Deming Prize Committee is a mandatory requirement to apply for Deming Prize. The diagnosis will help an applicant organization understand their strength and weakness from the viewpoint of the Deming Prize Examination standard. The Deming Prize

Examination and findings are closely linked. Receiving TQM Diagnosis by the Deming Prize Committee is also useful to further promote TQM activity effectively.





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