Newsletter

Indian Society for Quality

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Dear Readers ,

Greetings from ISQ !

Welcome to the 2nd Quarter Newsletter from ISQ!

It's my pleasure to bring you the Sept 2024 edition of the ISQ Newsletter with a peek into the upcoming events to enable you schedule your calendar, glimpses of the activities and events conducted in the last quarter.

The auspicious festive season has started already, one of the busiest period for Indian Business and my best wishes to you all for a prosperous "Samvat " !

The business world suffered an insurmountable loss on 9th Oct 2024 when an icon and epitome of a business leader our most beloved Mr Ratan Nawal TATA left us for heavenly abode. He was a true follower of Jamshedji's legacy that "In a free enterprise, the community is not just another stakeholder in business, but it is in fact the very purpose of its existence". He was embodiment of humility, passion, compassion, courageous to challenge the status quo and a profound understanding of the business. May God almighty grant peace to the noble soul.

ISQ president Mr Janak Mehta had the privilege of having him as a participant in his TQM workshop and I could not find better person in our cohort to write a tribute to Mr TATA. You can read the same in this issue.

Just a heads up for the upcoming annual Conference scheduled to be held on December 12-14, 2024. As communicated in our last issue, the event is a joint initiative of Pune Chapter and Bengaluru Chapter. Please make the most of this opportunity.

Detailed program schedule can be checked out on the website. Please block your dates, make your travel bookings etc. and network with professionals, peers in the industry. We request you to participate not only as a delegate but also sponsor your senior executives, to be a sponsor of the event will be greatly appreciated. You can access the details on ISQ as well as Conference website on the benefits and offers on various categories of Sponsorship.

Preparations are in full swing for the next ANQ Congress to be held in Bengaluru on September 18-20, 2025. Request you to save the dates and mark your calendars for this grand event.

In this issue we bring you a report on the case study in TEI (Total Employee Involvement) at Sundaram Clayton, which can throw some useful tips for you to emulate in your organizations and reap the benefits, you can read the detailed report here..

We have quiz too for some fun filled challenge!

Enjoy the read, have fabulous festive season!

Warm Regards,
Ved Parkash

ISQ Newsletter team: Ved Parkash – Editor in chief,
Editorial Members: Sarika V. Joshi, B. Sundara Rajan, R. Santoshi

Vignettes from Ram

Cause, Effect, and Something in Between

The Word that should be in between

I wonder sometimes if the term cause-and-effect has not been a historical mistake. There has to be a word in between. Call that a 'problem.' Replace the word 'problem' with words like phenomenon, failure-mode, or symptom, and the same logic holds. Problems have causes, and in turn produce effects. Causes could go backwards in sequence, ad infinitum.

In the real world, we stop looking for causes when we have found one that will reasonably meet our purpose. (We even arrogantly call it the 'root cause' – another historical mistake.) Effects too can proceed forward infinitely. Sensibly, we usually avoid searching for far-out effects. If we draw unidirectional arrows from the first cause to the last effect, it will seem as if a problem causes an effect and that effect # (n-1) causes effect # (n). But this is a misuse of the word cause. A problem may lead to an effect and the first effect to the second and so on, but these are conceptually different from causes, which can only lead up to problems or their equivalents. This also means that we can only solve problems, not effects.

System-level Causes

In my programs, I speak of the true story of an aircraft nosediving (effect #1), crashing (effect #2), and leaving no survivors (effect #3). Counterintuitively, the crash is not the problem – it is an effect. The failure mode in this case was that a nut in the tail wing got loosened and flew off. Without finding this failure mode, no causal analysis is possible. The immediate and technical cause was that a cotter pin that had been removed during maintenance hadn't been put back. Now the analysis must go beyond the technical level. A higher level cause is about procedures. An unsupervised, new maintenance technician had removed a cover, violating the standard. Would firing him close the matter? No, for we must necessarily deduce the causes for the procedural lapse at the system or management level. It turned out that the airline had been cutting costs – by reducing maintenance staff and training, thus leading to slack supervision and control. This story is a good illustration of how systemic causes are uncovered in policy management, in order to find the means to achieve objectives. The countermeasure here would clearly be to restore and reinforce the maintenance structure and systems.

Why-why

Many operational problems can be left at the technical level, though. This is what QC circles or young managers do. Taichi Ohno's famous example of asking 'why' five times starts with an effect (machine stopped working), hits the failure mode (overload on fuse), and ends with the oil shaft wearing out for want of a filter. Note that all of this is at the technical level. In Total Productive Maintenance (TPM), Ohno's 5-why system was renamed as why-why analysis. It has become a popular tool, but too often it is applied incorrectly.

In 2016, Mahesh Hegde made a video explaining cases of why-why analyses that end with non-causes such as operator mistake, SOP not followed, no poka-yoke, etc. He and I then had an exchange, digging into a 1988 article in Kenshu magazine, co-authored by Hitoshi Kume, with K. Shibata, about finding cause and countermeasure in Yokogawa Hewlett Packard. The table below is an example.

Phenomenon	Cause	Countermeasure
Frequent occurrence of bridging on some boards, but hardly any bridging on others	Bridging often occurs on boards not coated with solder resist (Bar chart data given)	Use of solder resist can reduce number of bridges to approximately 1/10 (Switched to using solder resist on all boards)

From a practical viewpoint, this analysis is spot on, with the countermeasure sharpshooting on an actionable cause. But this does not mean that one cannot continue and ask why (or how) coating with solder-resist avoids bridging. In this case, no attempt has been made to find a cause at the microscopic level, for instance.

Also, note that the problem is not eradicated, only reduced. There are other unidentified causes, therefore. Further, what we have is a correlation and a partial (or main) cause, though it is real and meets the purpose. The cause may also be called probable if it behaves differently when the variables change. Thus, in this highly successful example, there is no pretence about finding the 'root cause.'

Kume points out that in any situation, the number of possible failure modes is quite limited. Effects and causes may be many. Failure modes typically carry words like breakage, bent, loosened, choked, overloaded, current-surge, leak, burst, etc.

An allied tool is the Fault Tree Analysis (FTA) which can be used both predictively and in current operations. The tree uses a series of 'And' and 'Or' gates in a hierarchy to find the combination of 'base events' that can lead to a top event - a failure mode, either single or a combination of two or more modes. For quantification, probabilities are stacked, or Boolean Algebra is used. Advanced applications of FTA can be seen in aerospace applications.

Shifting Effects and Problems

The system of deploying control points (managing point, as popularized in India by Yoshikazu Tsuda) and check points has a shift built in. The boss's check point becomes the subordinate's control point. In a larger context, take a typical top management control point, customarily fixated on profit. For those in junior management, profits are effect # 'n' - far removed from their accountabilities. But even for top management, profit is an effect. It is a consequence of other meaningful objectives well achieved. In a Quality organization, the CEO may be well advised to fix other objectives and treat their effect on profits as validation. In management, a problem at a high level can become an effect at a lower level. A macro-example is Carbon dioxide emission, which is a problem at a national level. For a company, it is an effect, and the problem could be energy consumption.

Pseudo-causes

Denying a problem by explaining it away is a common failing in organizations. Why do we have accidents? We are all responsible, they say, or perhaps our people are not disciplined. Such statements make the problem unresolvable. Why do Indian cities have such poor air quality? Oh, but look at our population. Why is there so much attrition? It's common in this industry. And so forth. These pseudo-causes appear in flash responses, and of course, the real causes then lurk invisible.

More Tools and Techniques

Ishikawa's cause-and-effect diagram is well known, and for this reason is applied mindlessly at times. Noriaki Kano is at pains to explain that the correct translation from the Japanese should have been factor-and-effect. Its purpose is to avoid coming to conclusions too soon, and to cast the net wide in the search for candidate-causes. Modifications to the method include the addition of cards with complete statements instead of single words (Ryuji Fukuda).

In TPM, the Phenomenon-Mechanism (PM) Analysis techniques is widely used – and here the mechanism refers to a technical cause of a phenomenon.

Failure Mode

When using data, scatter diagrams and regression are common tools. Multiple regressions show the effect of many variables. Most of these are linear equations.

Randomized controlled experiments have been popular for long and are used in economics, agriculture, and sociological research too, A well-cited example is that of slashing the incidence of infections in Karachi through the intervention of promoting washing of hands with soap. Standard methods of design of experiments reveal not only likely causes but their interactions as well. Experimentation is about building the degree of belief in causes, in stages. Temporal data is essential for eventual validation.

Vignettes from Ram

In using language data, the relationship diagram is quite cerebral and helps find causes. This is particularly useful in policy management to identify means to achieve objectives. Affinity diagrams clarify soft causes. They are drawn using intuition and should also be interpreted the same way. In plotting a hierarchy of goals and means where the first level means become the objectives of the second level and so on, a tree diagram may be best. For one thing, it is forward-looking, while Ishikawa diagrams work backwards.

Correlation, Causation and AI

Karl Pearson, whose correlation coefficient tormented us in school, propagated the idea that there are no causes, only correlation. He held that causation is an extreme state when the correlation coefficient is unity. In this, he confused causality with certainty. As we have seen, real causes can be both partial and probable. It is true that correlation does not prove causation, but causation does produce correlation.

We have a new challenge. Deep learning and machine learning have advanced. By manipulating big data through mathematical functions, by trial and error, practitioners optimize settings through correlation alone. Their success induces them to regard the search for causes as wasteful. This is problem-solving without subject-matter expertise! Large Language Models (LLM) too use only correlation and are therefore derided by some as 'causal parrots.'

But a whole body of new work has arisen to reassert the need for finding causes. Knowing causes is a human activity, it is not innate to data. The next stop in Artificial Intelligence (AI) is being built on causal models. Bayes' conditional probabilities have progressed to the technique of Bayesian Networks and are an important component of this work, as are 'Structural Causal Models.' These work not only on observational studies, but also on interventions, using causal diagrams. Further, in The Book of Why, Judea Pearl brings up the concept of counterfactuals, that is, answering questions about what if an intervention had not taken place, or what if another intervention had happened. This is an advancing field, one that the next generation of Quality professionals is well advised to master.

A Turtle Story

To end, here's an apocryphal story. The king had a question. What does the earth sit on, he asked his minister. The minister, wise, said it sits on top of a turtle. Next day, the question was: what does the turtle rest on? The minister was wise again. It's turtles all the way down, your majesty.

So it is with causes. We simply catch one at a practical level and dare to call it the 'root cause.'

About the author:

Mr. N. Ramanathan is a senior counsellor and advisor of TQM. He is a Mechanical Engineer with Masters from IIM, Ahmedabad(1969) with 55 years of experience in industry, and in teaching and counselling. He is the recipient of the Edwards Medal 2021 for outstanding leadership from American Society for Quality (ASQ). Mr. Ram has received the Dronacharya Award in 2018 by ISQ for his contributions to teaching and counselling on quality. He is an Academician in the International Academy for Quality (IAQ) and serves on its Board as Vice President, and as Chair of its Examination Committee. Mr. Ram has been associated with twelve successful Deming Prize challenges, and has taught and advised Ashok Leyland, CEAT, SRF, Indus Towers, JSW, Mahindra group of companies, Tata Quality management Services, Tata Steel, and other organizations.

In Memoriam – Ratan Tata

In passing away of Padam Vibhushan Ratan Tata, India nay the World has lost an icon who personified universal values of Intellectual honesty, Respect for humanity and Self-discipline.

Mr. Ratan Tata lived upto the true spirit of Jamset Ji Tata's sublime purpose stated as "In a free enterprise, the community is not just another. stakeholder in business but is in fact the very purpose of its existence."

To do so, and make the organization grow in such a tumultuous environment is the time when the values and character gets tested. Mr. Ratan Tata accomplished that with humility and dignity. Mr. Ratan Tata dedicated his life in the yagna spirit contributing to the benefit of society especially those from the marginalised segment.

He was a giant in India and around the world in business and philanthropy. A selfless person. I have travelled widely and in most parts of the world Mr. Rata Tata was known and respected. The news of his passing away has been published in major mass media of many countries. For example, it was covered in Japan's major mass media outlets, including Nikkei, Asahi, Yomiuri, Mainichi, and NHK. It shows how he was respected by the business community as well as others.

In 2013 as Chairman of the International Academy for Quality, I approached Mr. Ratan Tata to award him the Quality in Governance Medal, I was a bit hesitant that he may decline. I was pleasantly surprised when he readily agreed with humility. This medal is presented to the business leaders who have over a long period of time promoted and practiced Corporate Governance as an individual, in the company and in the society. He recognised by accepting the medal he is setting an example for Quality in Governance. I had the unique privilege of presenting the medal to an Icon who was my role model.

In 1991 as the Chairman of Tata Sons Mr. Ratan Tata attended a 3-day program on Total Quality Management (TQM) I conducted for Tata Motors in TMTC, Pune. He actively participated in various workshops and exercises during the program. The way he interacted with other 30 participants on equal footing did not give the impression he is the Chairman. He attended the program to demonstrate his commitment to Quality (Big Q) as a driver for growth. Leading by example. I learnt deeper meaning of humility and respect for others. I was overwhelmed when Mr. Tata stated it was one of the best programs he attended.

We as professionals from the field of Quality can pay our homage to the noble soul by committing to follow his legacy. I believe it will enrich our lives and motivate us to work for the society in the Yagna spirit.

Janak Mehta
October 10, 2024

CEO THROUGH TQM @ NCR - a report

Creating the Extraordinary Organization through Total Qualit@y Management
Crowne Plaza New Delhi Rohini, New Delhi.
Dates: 19 ~ 21, July 2024

Popularity of the program surges. It was the 7th in the series of program CEO through TQM sinc3 2019. No words are enough to thank Mr. N Ramanathan for his gesture of conducting the program pro-bono for ISQ and to the benefit of senior management of the organisations. 36 senior executives from industries, participated in the program. For a complete report click **here.**

Dr. Prem Motwani wins The Deming Distinguished Practice Award

The Deming Prize Committee has announced this year's Deming Prize Winners. It is a happy moment to India and ISQ that Dr. Prem Motwani, Former Professor, Jawaharlal Nehru University, has been declared one of the three winners of the newly constituted Deming Distinguished Practice Award.
Dr. Motwani is closely associated with ISQ. He has been earlier conferred the "Order of the Rising Sun, Gold Rays with Neck Ribbons' by the Government of Japan in recognition of his contributions to promoting academic exchange and mutual understanding between Japan and India. He has authorized many books including four published in Japan.

Congratulations to Dr. Prem Motwani.

Deming Prize Winners from India

Following three organisations have won the Deming Prize from India

Tata AutoComp Systems Limited, Composites Division（India）

Tata Power Delhi Distribution Limited（India）

Tata Ficosa Automotive System Private Limited（India）

Annual Conference 2024

ISQ Pune and Bengaluru Chapter are happy to announce the Annual Conference 2024 in Bengaluru.

12th December to **14th** December 2024

Dwaraka Auditorium,
M. S. Ramaiah Medical College Campus
M S Ramaiah Nagar, Mathikere, Bengaluru, 560054

Block your dates now. Be in touch with us for updates through www.isqnet.org or write to info@isqnet.org

Online knowledge sharing sessions

Date/ Organised by	Knowledges sharing session	Speaker
19 07 2024 / Pune Chapter	Quality, Modern Technology, Data and People: the Leading Improvement Combination	Paulo Sampaio, Professor of Quality and Organizational Excellence, University of Minho International Advisory on Quality, Improvement and Innovation Programs
24 08 2024 / Chennai Chapter	Continuous evolution of business models through Lean Management and huge opportunity for India	Shankar, Head Shared Services, Equitas Small Finance Bank
28 09 2024/ Pune Chapter	Quality Manager – The first 100 days	Govind Ramu Quality Management Professional, ASQ Fellow, Stanford LEAD Distinguished Scholar, ASQ Crosby Medal Recipient
04 10 2024/ Pune Chapter	TOPS Convention 2024 Pune	Event successfully completed. Report in the next issue

Upcoming programs - National

Event	Date	Location	Organised by
TOPS Convention 2024 NCR	23 11 2024	Tata Power DDL Learning Centre Rohini, New Delhi	ISQ NCR Chapter
Quality Month Lectures 2024	2, 9, 16,, 30 Nov 2024	Virtual – through MS Teams	ISQ GC
Annual Conference 2024	12 ~14, Dec 2024	Ramaiah Medical College Campus, Bengaluru	Conference Committee ISQ
TOPS Convention 2024 Chennai	04 01 2025	SRM Institute of Science & Technology, Vadapalani Campus, Chennai	ISQ Chennai Chapter
Quality 4.0 symposium	23, 24, Jan 2025	R V College of Engg, Bengaluru	ISQ Bengaluru Chapter

International

ANQ CONGRESS 2024

Date: 16-20, September 2024
Place: Keio University, Yagami Campus, Yokohama
Host: Japan Society for Quality Control (JSQC)
Mode: Physical

The Asian Network for Quality (ANQ) congress was held from 16 to 20 September 2024, hosted by the Japanese Society for Quality Control (JSQC). Around 200 research presentations were registered and presented during the Congress.

The Congress also saw the presentations of the Ishikawa Kano Award - Gold and Silver medals, Asian recognition for excellence for quality practice award-winning activities, and the presentation of the Asian Service Award.

From India 30 participants attended the Congress out of which 25 were paper presenters. 16 ANQ organisations participated in the congress. We are also happy to share that three papers were awarded the "Best Paper Award" from India.

For a detailed report please click here

IAQ Quality Sustainability Award 2024

Thank you for the good participation in the IAQ Quality Sustainability Award 2024. 38 applications were received from 25 organisations.
In the first round of assessment, 16 applications were shortlisted for the second-round assessment.
Out of 16, 11 applications were selected for the final presentation round.
The presentation round will be held virtually on 19th October 2024 from 9 AM to 2 PM. 11 teams will do their presentation. National winners will be selected after the presentation round. Out of which national finalists will be selected who will be eligible to apply for the global competition of QSA 2024.

The 11 teams who are going to participate in the presentation round

Organisation	Paper Title
Mahindra and Mahindra Ltd., Automotive Division, Zaheerabad	Energy consumption reduction in Paint shop through innovative ideas-ZHB
Hero Motocorp Ltd, Delhi-Jaipur Highway, Gurgaon	Waste Upcycling & Resource Conservation
Mahindra & Mahindra Ltd., (Swaraj Division Foundry), Mohali	To become water positive plant , Swaraj Division Foundry (Mahindra & Mahindra Ltd. (Majri, Mohali)
SRF Limited – Packaging Films Business (PFB), SEZ Indore	Reduce carbon emissions in SEZ Unit by 5% (base year 2022-23)
Maithon Power Ltd.,Works: Villàge Dambhui, P.O. Barbindia	Improvement of Station Auxiliary Power Consumption from 5.87% to 5.68% in PLF Band of 70%-95%
Tata Motors Limited, Pantnagar	BlueFuture :TML Pantnagar's Path to Water Resilience "way to Water positivity
Hero Motocorp Limited, Dharuhera plant, Delhi – Jaipur Highway , Dharuhera	Optimization of Resources by reduction in water consumption by 60000 Liters (60 KL) per day in FY 23-24
JSW MG Motor, Halol G I D C, Kanjari Part, Chandrapura	Driving sustainability through EV (Electric vehicle) battery refurbishment
L&T Precision Engineering & Systems,Post: Bhata,Surat	IoT Enabled Futuristic Welding: Reducing Human Fatigue and Carbon Footprint
Mahindra & Mahindra Ltd., (Swaraj Division Foundry)	Power consumption reduction of Swaraj Division Foundry (Mahindra & Mahindra Ltd. (Majri, Mohali)
Ashok Leyland Ltd, PNR	"Supporting long-term economic growth" (Scaling Up Paint Shop Capacity) while protecting the environment.

Article

TVS -Sundaram Clayton and Total Quality Management

Introduction:

The TVS Group, which comprises over 60 companies, is one of India's most respected business groups, with interests in diverse industries including automobiles, auto components, logistics, distribution and dealerships, finance and real estate.

The group was founded in 1911, when Mr. T V Sundaram Iyengar, the visionary founder, started a bus service in the town of Madurai in the southern part of India. The TVS bus service had an impeccable reputation for plying "on time, every time," and it is said that the priests of this temple-town set their watches by the arrival of the TVS bus. This commitment to customer satisfaction and exactness has been the foundation for the growth and success of the group.

In its more recent history, Total Quality Management (TQM) has been widely adopted as the 'way of life' in the TVS Group. As a testimony to the group's unwavering commitment to quality, five TVS companies have won the coveted Deming Prize of Japan.

Sundaram Clayton Limited (SCL) is one of the largest auto components manufacturing and distribution group in India. SCL is a leading supplier of aluminium die castings to automotive and non-automotive sector. Since commencing operation in 1962, SCL has achieved many milestones and emerged as one of the preferred solution providers in machined and sub-assembled aluminium castings.

SCL contribution commences from early design stage to development and supply of finished product. Over the years, SCL has built strategic partnership with global OE / Tier one. With the robust manufacturing driven by TQM, TPM, Lean practices and investments in state-of-the-art technologies, SCL is poised to serve the future needs of the industry in light metal castings.

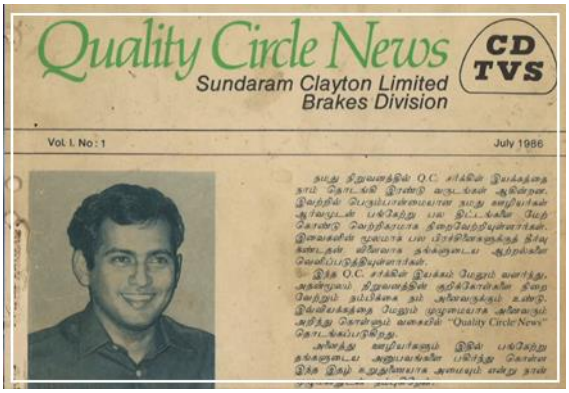
Evolution of Total Quality Management at Sundaram Clayton Ltd.: A Journey of Excellence

Sundaram Clayton Ltd. (SCL), a prominent name in the automotive industry, has set exemplary standards in Total Quality Management (TQM) practices. This article traces the remarkable journey of SCL's TQM evolution, highlighting key milestones, initiatives, and the profound impact of expert guidance from Japanese TQM mentors.

1985 -1990: TQM Introduction phase

The Genesis of TQM Practices:

In 1985, SCL embarked on its TQM journey. The initial steps involved forming a dedicated TQM administrative cell, aiming to foster a culture of continuous improvement. At that time, the division categorized suggestions into two types: Work-Related Ideas (WRI) and Non-Work-Related Ideas (NWRI), both to be implemented by management.


Quality Circle News
CD TVS
Sundaram Clayton Limited
Brakes Division
Vol. I. No: 1
July 1986

High-Level Engagement.

A three-day top-level TQM seminar, attended by our beloved Shri Venu Srinivasan - Managing Director by then, further underscored the importance of quality control. This seminar marked the beginning of a series of quality initiatives, including the inception of Quality Control Circles (QCC).

To disseminate knowledge and foster a culture of continuous learning, SCL launched an in-house journal, "TQC News."

1991-1997: TQM Promotion phase

Introduction of TEIAN

The significant turning point came with the introduction of TEIAN, a Japanese-origin suggestion system, which led to the abolition of the WRI and NWRI categories. This shift empowered employees to take a proactive role in suggesting improvements, ensuring a more inclusive and dynamic TQM environment.

Deepening Understanding and Expert Guidance

Initially, the understanding at SCL was that QCC equated to TQM. This perception evolved with the arrival of Professor Kurahara from Japan, who introduced the concepts of Policy Management and Daily Management. From 1985 to 2005, Professor Tsuda provided invaluable guidance, helping shape SCL's quality practices.

Professors Tsuda and Professors Y. Washio became regular mentors, visiting SCL every three months. Professor Tsuda focused on policy management, while Professor Washio emphasized quality management. Their advice led senior management to attend JUSE seminars, further enhancing their understanding of TQM.

The organization also initiated policy planning meetings, often held off-site, and started working on X-matrix frameworks to streamline their strategic objectives.

TEI Conventions and Incentives

The establishment of a **TEI Convention** was a pivotal move to celebrate the success of engaged employees in improvement activities and securing commitments from individual circles for forthcoming year. A dedicated QCC meeting hall was set up, and employees were given time off to participate in these meetings. Monthly presentations began, with circles being awarded based on their performance.

TEI Convention:

The TEI Convention is a unique initiative by SCL that celebrates the successes of the past year with all employees. This annual event is held at a convention center and attended by top management, executives, and managers. It begins with the distribution of complimentary gifts, including T-shirts, backpacks, diaries, pens, and snacks. The entire event is managed by SCL employees. During the convention, a video showcasing the organization's TQM journey and improvements across various plants is presented. Additionally, a theme song written and composed by employees is played along with a thematic video. A key highlight of the event is the presentation of the previous year's TEI achievements by respective HODs and QCC teams, who also outline their plans for the coming year.

Achievements are celebrated through the recognition and rewarding of teams and individuals. Top leaders share business priorities, emphasize the importance of the TEI theme, and commend employees' efforts.
The half-day event concludes with a gala lunch, leaving everyone with smiles, satisfaction, and a sense of pride

.

1998-2005: TQM consolidation phase

In 1998, the company received the coveted Deming Prize (First Indian company to receive Deming Prize), marking a significant milestone in its journey towards excellence. This achievement was followed by the initiation of Cross-Functional Teams (CFT) and Supervisor's Improvement Teams (SIT) programs led by the executive team. The following year, in 1999, the QC Circle began participating in international competitions, and the individual suggestion count reached 50 per person annually. Special appreciation in the form of a 20-gram silver coin was awarded to individuals who achieved this milestone. Participation in Quality Control Circles (QCC) was at 75%, while SIT/CFT participation stood at 20%. Additionally, monthly theme- based celebrations, focusing on Productivity, Quality, Cost, Delivery, Morale, and Safety (PQCDMS) were initiated. Monthly Gate meetings were introduced to share business information and recognize achievers.

> The Deming prize only means that we have been given the ticket to get into the (TQC) train. It doesn't mean that we have reached our destination.
>
> *- Shri Venu Srinivasan,*
> Chairman Emeritus, Sundaram-Clayton Ltd

With guidance from Professor Hitoshi Kume, SCL set a target to achieve 100% participation in all Total Employee Involvement (TEI) activities. This ambitious goal was successfully met, underscoring SCL's commitment to continuous improvement.

In 2002, the company was honored with the Japan Quality Medal. During the same year, Total Productive Maintenance (TPM) and Lean initiatives were launched to further enhance operational efficiency and quality.

2006-2012: TQM growth phase

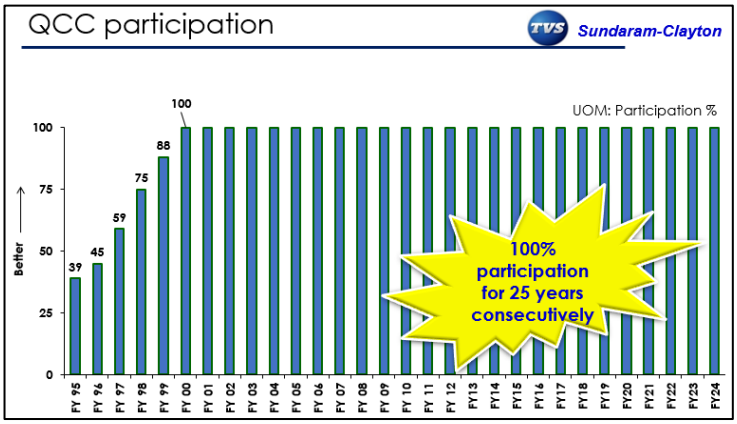
SCL has sustained the learning of previous phases and continued its journey of growth by rotating PDCA into its various TQM initiatives.

In 2006, the company achieved remarkable success, securing 8 awards at the QCFI National Level QCC Competitions and earning 4 Gold Medals in National Level Competitions at ICQCC, along with 2 awards from the HSCI supplier club. The following year, in 2007, the company continued its winning streak with 4 awards in QCFI NCQC, 2 medals from CII, and 1 medal from CCQCC. Additionally, the company was honored with a 3-star sword in the competitions held at ICQCC. Demonstrating their commitment to operational excellence, the company won the TPM Excellence Award from JIPM, Japan.

The company also received recognition from customers, including an award from Tata Cummins for excellence in New Product Development and the Best Cost Reduction Initiative.

2013 – Present: TQM Advancement Phase

The organization continually practices Total Quality Management (TQM) by applying the PDCA cycle and incorporating the latest TQM methodologies, such as the 4S analysis, Stability Capability Matrix, and by strengthening its PESTLE, SWOT, and other strategic initiatives.



Conclusion

The journey of Sundaram Clayton Ltd. in implementing TQM practices is a testament to the power of strategic vision, expert guidance, and unwavering commitment to quality. From the early days of TQM practices to achieving international accolades, SCL's story serves as an inspiration for organizations striving for excellence in quality management. For the past 24 years, SCL has achieved 100% participation in Suggestion, QCC, and SIT/CFT activities continuously.

Vishwadeepak Khandelwal
General Manager (Head) – TQM
On behalf of TVS Sundaram Clayton Ltd

About the author:

Vishwadeepak Khandelwal, Head of TQM & Workmen Skill Development at TVS Sundaram Clayton Ltd. (TVS-SCL), brings over 20 years of experience in leading TQM initiatives and driving progress in Deming and Deming Grand journeys across multiple organizations. Prior to TVS-SCL, he played key roles in advancing TQM practices at M & MLtd.'s tractor division in Jaipur, Chandigarh, and Pant Nagar Plants, as well as at Ashok Leyland Ltd.'s Pant Nagar plant and Apollo Tyres Ltd.'s Chennai plant. Vishwadeepak holds TPM facilitator certification from CII and contributed significantly to TPM Excellence and Consistency awards at Mahindra & Mahindra Ltd. He has extensive training in various TQM domains, including Policy Management, DWM, Improvement Management, Standardization, Vertical Evaluation, Application of QA Matrix, and Four Student Analysis. Vishwadeepak gained practical experience under esteemed Japanese TQM experts such as Dr. Noriaki Kano, Prof. Yukihiro Ando, Prof. Y. Washio, and Prof. Kubota San. He has trained and guided over 500 QC Story and improvement projects, significantly enhancing organizational performance. He also actively contributes to the executive committee of the ISQ Chennai chapter.

Quiz Quest

Quiz Quest

1. **Two major components of fitness of use are Quality of Design and _____**

   A. Quality of Conformance B. Quality of Service C. Quality of Specification D. Quality of Manufacturing

2. **For new product development, the chosen methodology should be**

   A. DMADV B. DMAIC C. Structured Design Methodology D. DMIE

3. **The critical path method determines the _____path from the beginning to the end of the project.**

   A. Shortest B. Quickest C. Longest D. Middle

4. **The Operating characteristic curve shows the relationship between the probability of acceptance (on y axis) and _____ (on x axis).**

   A. Proportion defective B. Proportion acceptable C. Number of lots D. Size of lot

5. **In a double sampling plan, let d1 be the number of defects in the first sample and d2 be the number of defects in the second sample. Let c2 be the acceptance number for both samples. The condition for rejection is:**

   A. D1+d2<c2 B. B. D1+d2>c2 C. D1∗d2>c2 D. D1∗d2<c2

6. **While random variability in a system can be removed by _____, non-random variability requires _____.**

   A. Operator or management action, Improvement in the system
   B. Improvement in the system, operator or management action
   C. Statistical Quality Control, Quality Checks D. None of the above

7. **The concept of rational sub group means that subgroups or samples be selected such that if assignable causes are present the chances for differences between subgroups will be _____.**

   A. minimized B. maximized C. neutralized D. optimized

8. **Q-Q plot is used to check:/p>**

   A. Normality of the dataset B. Number of defects C. Process mean D. Process standard deviation

9. **The OC curve provides a measure of the _____ of the control chart.**

   A. Sensitivity B. Duality

To know the answers, please refer page no. **14**

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Answers to Quiz Quest

1. A. Quality of Conformance	4 A. Proportion defective	7. B. maximized
2. A. DMADV	5. B. D1+d2>c2	8. A. Normality of the dataset
3 C. Longest	6. B. Improvement in the system, operator or management action	9. A. Sensitivity

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