

An Illustrational Analysis Of An Innovative Quality Management Practices In Toyota

Dr.Kabirdoss Devi, Assistant Professor (SG), Department of Management Studies, Saveetha Engineering College, Chennai

Mr.Yogesh. V, II Year MBA, Department of Management Studies, Saveetha Engineering College, Chennai.

Mr.Naresh P, II Year MBA, Department of Management Studies, Saveetha Engineering College, Chennai.

Abstract:

Toyota Motor Co., Ltd is known for many innovative practices of quality management. Companies' task environment which is uncertain and bound to major risks involves many strategies to cut throat competition. Toyota takes many laurels by implementing creative quality techniques which helped them to come across competitions globally. This papers aims to unfold the various quality techniques that was innovated and practiced by Toyota Company at functional and business level to upheave operations management. This paper is an observational study which will bring forth the successes and benefits that Toyota attained by these practices.

Keywords: TQM, strategy, Toyota, techniques...

Introduction:

“Competition” is one word which strongly drives the employer and employees to the ultimate goal called customer retention and new customer attraction. People are well aware that challenging the competition together is the only way to survive in the market. Meeting customers' tastes and preferences without comprising the quality at a low cost is the need of an hour. The only way to reduce cost is the implementation of innovative quality management technique. Toyota which leads the market in the automobile sector would be the apt company to study the innovative quality management techniques.

A Japanese Automotive manufacturer, Toyota Motor Corporation is headquartered in Aichi, Japan. It was in 1924, Mr.Sakichi Toyoda who invented Toyoda Model G Automatic Loom.

The unique feature of machine stopping itself when problem occurs became Toyota Production System.

Initially, the Toyota built the looms in a small production line. This was patented and sold to British company in 1929 where the Platt Brothers who acquired this generated starting capital for the automobile development. In 1933, Kiichiro Toyoda, son of founder started Toyota's automobiles in a division called Toyoda Automatic Loom. In 1935, A1 passenger car and the G1 were produced as a first vehicles from this unit and this was point of time where Toyota Motor Co. was recognized as a self-determining company in 1937.

Vehicles produced during this period were sold under the brand name of "Toyoda" which was the family name of company's founder, Kiichoro Toyoda. Toyoda released its first passenger car Model AA and sold at 3,350 yen which was 400 yen lesser than Ford or GM cars.

In 1937, it wanted to change its name "toyoda" which means "fertile rice paddies", as it was being associated with old-fashioned farming. They trademarked it Toyota Motor Company registered in August 1937. Since then the company was recognised as TMC and excels in all their strategies towards the global march of automobile sales.

Glimpse of Toyota's Annual Sales for the previous year-

This study analyses the innovative practices made by Toyota in their production system. Success of this could only be proved when the details on the sales are taken into consideration as sales marks the major instrument in the comparative study. When we look into the global sales of the year, Toyota's sale increased by 2,89,532 units additional compared to the previous year. Total sales of the year 2017 is 8,970,860.

For the upcoming fiscal year the company predicts that the global consolidated vehicle sales would be expected 8.9 million with the revenue of 27.5 trillion yen. They also estimate that for the estimated sales, the estimated operating income would be 1.6 trillion yen with the net income of 1.5 trillion yen.

Global Ranking Positions of Toyota-

Toyota awarded the top place in the global brands ranking in the Automotive Sector for the year 2017 by Interbrand. The brand value of the Japanese manufacturer, The Toyota Motor company estimated to be around US\$50.291 billion. In the overall rankings, Toyota protected its seventh position, beating brands like Apple, Google, Coca-Cola and Samsung.

Evolution of Total Quality Management in Toyota:

Industrial production during medieval era was mostly performed on a cottage scale which ignored appearance & strength and preferences were judged by common sense and mutual acceptance. Emergence of quality concepts were born and grown gradually to address the issues with respect to the industrial revolution, competition and free markets.

“Customer First” is the basement of Toyota in Total Quality Management. It’s not only customers but also employees that Toyota gives importance too through “Kaizen” – continuous improvement and “Total Participation” – the involvement and input of all employees. Encouraging employees to make effective contributions to the company’s expansion is the operative strategy of the Toyota. In order to make this functional Toyota launched a program called “Creative Idea Suggestion System” to support the operative strategy. This program was successfully launched in the year 1951. Ahead of this program Toyota introduced Statistical Quality Control (SQC) in 1949 for the same.

Birth of Assembly-lines and Mass Production post Industrial Revolution. Post second world war economy of Japan needed a complete economic rebuilding. Toyota was the first to implement Quality Control in 1940’s and 1950’s. Toyota Production System, aka, “Lean Production”, owes itself to the work of Edward Deming. Along with other principles, Toyota boasts many management tools such as its 8 Step Practical Problem Solving Method, PDCA, A3 Reporting and 5S.

Need of the study:

Toyota is always found as an innovative company both for its products and product processes. They are superlatively identified as the best for the ability to solve all sorts of functional and operational problems effectively which is a must for ensuring the quality

services. One must continuously analyse what made them more successful. Is it the appropriate countermeasures which were taken at the right time? Or is it the root cause analysis which lead them to the permanent solution.

“GenchiGenbutsu” is a technique of widening one’s knowledge to the deepest source of data and clarifying with one’s own experience. This was practiced well and taught at all levels irrespective of the level of management for the better accomplishment of results. Even minor issues are addressed at Toyota for the error rectification. A complete details on all these aspects help any tycoon practice the business tactics successfully.

“The Toyota Way”- at par achievement



Eliminating waste and over production is what Toyota strives and efforts to create an organisational system where all the employees of an organization can come forward and suggest a change where they see it. Toyota always values high of human partaking. They try to give persistent reassurance for auxiliary innovation, consensus and idea for improvement. These approaches in “The Toyota Way” primarily focusses on long-term improvements rather than short term. The two main pillars of the Toyota Way being “Customer First” and “Respect for People”.

Impacts of Implementing TQM in Toyota:

Toyota Production System or TPS is Toyota Motor Company's specifickind of valueadministration. This includes JIT (Just-in-time) where the required materials for the

production arrives at the production unit only upon placing an order to avoid excess expenses on inventories, Kanban or Jidoko or Automation.

Kanban System-

The Origin of Kanban-

The original idea of Kanban came from supermarkets. The customer essentially selects what they want, when necessary, in the quantity desired. The grocer organizes and arranges produce in such a way that the customer can do this easily. In Kanban, process occurs to accomplish the just in time method. In general, it is an info which joysticks the measures in every process.

The General Production System-

In this system, each process manufactures and delivers the parts based on the schedule. Worksite wants to have high productivity that may produce more than production schedule.

Importance of Kanban System-

In Kanban, the required amount of materials in units and types are written in a card. It is sent to the individuals in preceding process to the successive process which unites many progressions in a Toyota plant. The following are the important factors,

- Smoothing of process
- Lessening of machine set up time
- Automation
- Standardization of jobs
- Improvement activities

Just in time-

The awareness after just in time is engineering the essential volumes in prerequisite quantities at the necessary interval. For instance, upon the release of an order for making of a car grasps, all deputised lines to spread the key assembly at a right time with a right quantities.

Just-in-time production can be defined as a combined set of actions planned to accomplish high volume production using minimal inventories (raw materials, work in process, and finished goods).

Just-in-time works with the principle where the exceptionally tweaked processes in the assembly system allows only the quantities of items required for production only when it is being ordered.

The primary objectives of Just-in-time is to save the cost on the warehouse space and avoid unnecessary carrying-cost and to improve efficiency. Efficiency would be obtained in Just-in-time practices only upon organising the delivery of materials to individual work stations just before they are physically required but only upon receiving an order for the production.

Automation-

To achieve supreme of just in time of one hundred percent, good pieces must reach the prior process and this process should remain without any intermissions. This explains, quality rheostat must co-exist with JIT to get the best out of Kanban.

The idea behind automation is to construct a process in an instrument which prevents and avoids defective items in product lines in mass production. It involves automatic checks for deviations in the process. At Toyota all machines are automated and every machine is attached with instinctive discontinuing manoeuvre. This avoids mass production of sub-standard objects and also alarms machine break downs if there are any.

Toyota has mounted a system called Toyota's Visual Control System where a device called Andon, suspended very high in the factory for everyone's visibility to detect incongruities in the process.

Benefits of Quality Management-

The major push of Total Quality Management (TQM) in Toyota is to realise product efficiency and process efficiency by recognising and eradicating problems in work processes and systems. TQM in Toyota discourses key problem areas such as faults in work processes, jobless processes, superfluous tasks, and replacement efforts. TQM interventions in Toyota also help with foreseeing and anticipating such slipups and infertile deeds.

The major benefits of TQM in Toyota in terms of cost savings include:

- Elimination of non-confirmation and repetitive work
- Elimination of waste costs and reject products
- Elimination of repairs and reworks
- Reduced warranty and customer support costs
- Process efficiency leading to improved profit per product or service
- Fiscal discipline through elimination of unnecessary steps and wasteful expenditure

TQM in Toyota frees up management time from redressing problems and directs management time and effort to:

- Increase production
- Extend the range of products
- Improve existing products.

Evidence based study of Toyota practices:

The thinking and employment of quality practices in Toyota is constantly viewed as justifiable, rich and proven. The successes that followed in the organizations which followed these techniques in their operations evidently shows that these are set to focus solely on activities that enhance value to each and every stakeholders of the organization. But one must also understand that successes should be compared between these industries using the same techniques as apples to apples than apples to oranges. Same practices followed in the service industry should be measured on the basis of service quality.



Source: Pierre Masai, VP&CIO of Toyota Europe at the European Lean IT Summit 2012.

1. Clarify the problem 2. Breakdown the problem 3. Set a target	5. Develop countermeasures 6. See countermeasures through
4. Analyze the root cause	7. Evaluate both results and process 8. Standardize successful processes

8- steps of Toyota Way of Working

Toyota appreciates that clarifying the problem, breaking down the problem, setting a target and analysing the root cause are important and vital to guarantee that the right solution is identified for the problem in the right way. Stratifying the data, using the Pareto technique to breakdown the problem and asking for the right person at the right place, right time and at right manner to highlight the top issue to be attacked.

The major contribution of Lean Process to the manufacturing sector is that most of the business processes are ninety percent waste and ten percent value- added work. Creating unremitting flow and a process flow to bring problems to the surface, designing work

processes that eliminate waste and striving to cut back idle time and waiting time and so on are some of the subtle techniques of lean system.

Conclusion:

The Toyota production system is practical and effective as it cracked out from the real life involvement of the organization. This system is supplemented with hands-on possessions, genuine practices and consequences over the scrutiny. This quality management techniques developed and practiced by Toyota Company flagged a durable route to all the other companies' triumphs around the world. These techniques are proven successful as they are being followed by hundreds of western companies till dated. Hence it is observed that Toyota has turn out to be the World's Top manufacturing company with the help of "Quality Management".

References:

1. Mohanty, R.P. and Lakhe, R.R. (2002) Handbook of TQM. Delhi: Jaico Publishing House.
2. Premchand, P. (2009). Total Quality Management in University Libraries, Delhi: Authorspress.
3. Kumbhar (2004). The Importance of Marketing and Total Quality Management in Libraries. Electronic Journal of Academic and Special Librarianship, 5 (2-3)
4. Ramesh (2000). Role of ISO 9000 standards in Obtaining TQM in Libraries: Some Problems and Prospects. Herald of Library Science, 39 (1-2): 19-28.
5. Samuel, K.H (1999). Encyclopedia of Management: TQM, New Delhi: Crest Publications, vol.3, p. 292.
6. Radnor, Z., 2000. Changing to a Lean Organisation: associated measurement instrument. J. Manufacturing and Technology Management.
7. Anderson, J.C., M. Rungtusanatham, R.G. Schroeder and Devaraj, S. 1995. A path analytic model of a theory of qualitative management underlying the Deming management method Management Method: Preliminary empirical findings. Decision Sciences, 26: 637-658.