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# **Implementation of Total Quality Management in Small Manufacturing Enterprises**

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**ABSTRACT:** The concept of TQM (Total Quality Management) is based on eight main pillars that are described in this paper that are easy to implement for an SME without any financial aid but it has not been fully implemented yet because of a lack of awareness among the managers of the SMEs. The TQM approach not only can increase the profit and reputation of a company but it also can increase the overall life quality of the employees. Here in this paper, a real-life scenario has been shown, where the implementation of TQM benefited an SME's overall performance. And will be beneficial for the managers of SMEs who want to implement TQM for their enterprise.

**KEY WORDS:** Total Quality Management, Significance, Small Manufacturing Enterprises, Plan-Do-Check-Act Cycle, Standardization.

## **I. INTRODUCTION**

The philosophy of TQM (Total Quality Management) that had already been implemented by the corporate giants gave them financial and reputational benefits. However, the SMEs (Small Manufacturing Enterprises) in India are still unable to implement the concept of TQM due to a lack of managerial as well as technical knowledge. TQM automatically increases the quality of the end product as well as satisfy the need of employees by giving them a proper working environment and job security. The customer-centric approach of TQM helps an SME to identify the market demand and thus modify the end product continuously. The improved quality of the end product allows an SME to compete with international brands in the domestic market and helps to reduce the import of a country and thus TQM helps to make a country self-sufficient in every aspect. The continuous improvement approach of TQM also allows an SME to upgrade it with time and technical upgradation of machinery and production procedures. Obedience to the quality standards given by the International Organization for Standardization (ISO), Deutsches Institut für Normung (DIN), and Bureau of Indian Standards (BIS), etc. organization also plays a crucial role in the successful implementation of TQM in SMEs.

## **II. LITERATURE SURVEY**

According to Oluwaseun Niyi Anifowose et al. (2022), customer satisfaction in the long term depends on the company's management and workers' ongoing efforts with loyalty. According to Permana, A. et al. (2020), TQM is still actively used in many industries around the world because it improves the overall quality of the organization to deliver the best product or service to the consumers. Lalit K. Toke et al. (2020), introduced that TQM is an effective way to increase the effectiveness and flexibility of a business as a whole. Virendra Kumar et al. (2016), introduced that to implement TQM an organization needs to collect and analyze data continuously to improve decision-making accuracy. As per the opinion of Neena Sinha et al. (2018), if an organizational culture can be merged with TQM then it will yield the performance better of an SME. Mengsteab T Beraki et al. (2022), proposed that the management of SMEs must comprehend the need to implement TQM and they also need to determine what works and what does not for the benefit of the enterprise. Curpănaru Gabriela-Livia (2021), proposed that the main instrument of TQM is the Plan-Do-Check-Act cycle or PDCA cycle that is focused on the direction of continuous improvement of quality management.

## **III. SIGNIFICANCE OF TQM FOR SMES**

- Implementation of TQM increases the sales volume by satisfying the customers and thus it helps to make an SME more profitable.

- It helps to make an SME more adaptable and sustainable with changes in market conditions or government regulation.
- Provides job security and makes an employee more loyal to the company, thus increasing the productivity and quality of the end product or service.
- Focuses on cost control and cost reduction thus increasing profitability.
- Product with improved quality helps to create brand value for the enterprise.
- TQM helps to increase the market value of the company's share and thus it attracts more investors to invest in the company for expansion of the business.
- It helps to reduce defects in the end product as well as generate less amount of wastage.

#### IV. IMPLEMENTATION PROCESS OF TQM FOR SMES

- **Customer's Perspective:** TQM allows the managers to see from the perspective of its customers. As customers are the ones who will spend their money to buy the service or product, a judgment of them about the effectiveness or usability matters a lot. In this regard, feedback needs to be collected from the customer regularly. The management of an SME should utilize the data while making managerial decisions.

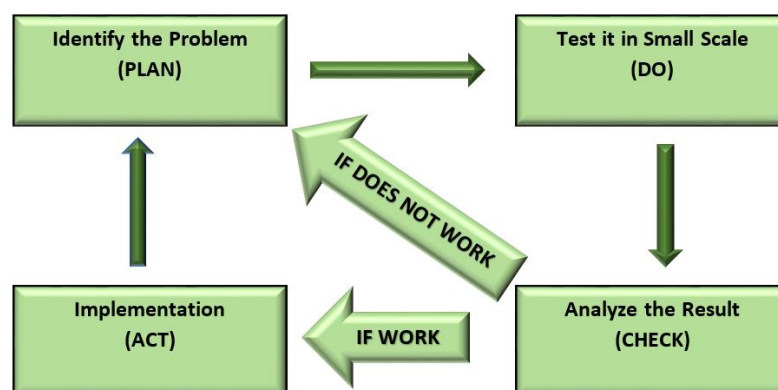


Figure1: PDCA Cycle for Continuous Improvement

- **Effective Leadership:** Only strong leadership can provide a proper work environment to its employees which is necessary to implement TQM. It's the key responsibility of the leaders to motivate the employees and to ensure that they are willing to stay with the SME in the long run. Only an experienced employee is capable of effectively handling more tasks in a short time without compromising with the quality thus increasing the productivity of the SME.
- **Continuous Improvement:** Learning continuously from mistakes and modifying the production process or product design accordingly makes a great impact on the upgradation of an SME concerning time, modernization of machinery, and changes in market demand. Managers should remember the benefits of continuous improvement while making managerial decisions.
- **Involvement of the Employees:** To get the best output from an SME the management has to check whether every employee is giving their full dedication or not to the growth of the enterprise. In this regard, the management should collect feedback data from the employees regarding their suggestions for the development of the enterprise. Data regarding grievances (if any) of the employees also need to be collected with the same feedback form. To ensure the involvement of every employee the management should emphasize creating a competitive atmosphere. In this regard, remuneration can be provided to those employees who are maintaining proper quality in their respective fields. Proper training will have to be given to the employees who are lagging.

- **Fact-Based Decision Making:** All managerial decisions should be taken based on facts such as reports published by the government or reputed organizations, research journals, current sales reports financial statements of the company, etc.
- **Well-Maintained Relationship:** A well-maintained relationship with the customers helps an SME to get honest feedback regarding the quality and usability of the end product. And it also leads to customer satisfaction ensuring the reorder of the product or service. To achieve this the management should emphasize effective communication at every level. Short-term courses can be conducted in this regard, ensuring the participation of all the employees.
- **Proper Monitoring and Maintenance:** Proper monitoring and inspection at each step is highly required to achieve a high-quality end product. CCTV cameras can be installed in vital places to monitor the activities of the employees. In this regard, maintenance plays a vital role. The management of the SME should maintain a proper maintenance register separately for each group of machinery (including desktop/laptop computers).
- **Integrated Unit:** The management should ensure that all the employees are aware of the common objective of the organization and they are working actively to achieve it. Flow charts and other visual aids may be used to understand their position in the organizational structure as well as their importance in this regard.

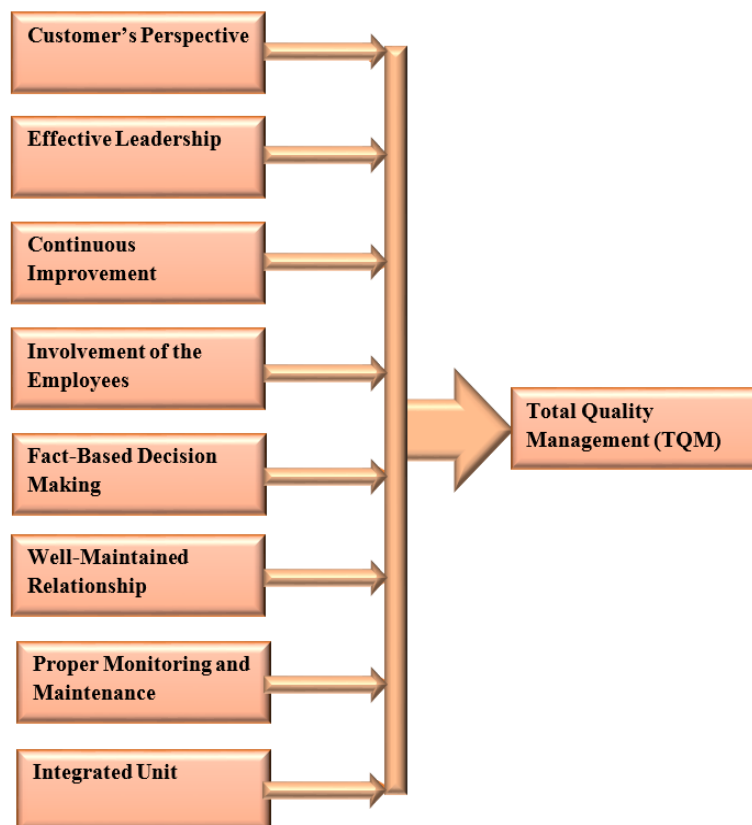


Figure 2: Key Points for Implementation of TQM

## V. CASE STUDY

ABC Enterprise is an eco-friendly, single-time usable paper plate manufacturing enterprise, located in Purba Bardhaman district, West Bengal, India. Paper plates i.e. the main product of the enterprise have a high market potential in India. It is eco-friendly and the low cost of it makes it feasible for Prashadam distribution during pujas, selling of fast foods in festivals, and in ceremonial activities where hundreds of people are invited. At this point, the management of the company wants to emerge as a reputed brand and want to capture the emerging market of India. At this point, the implementation of TQM can act as a problem-solving approach for that SME.



**VI. METHODOLOGY**

After observing the current production process of the enterprise minutely, feedback collection from both the retail and wholesale customers was given as the first suggestion. In this regard one feedback form was distributed with each lot of plates and the consumers were

**ABC ENTERPRISE**

*Purba Bardhaman, West Bengal, India*

**REPORT NO.:**

**DATE:**

**INTERNAL INSPECTION REPORT**

<b>Customer Name:</b>	
<b>Name of the Item:</b>	
<b>Customer Order No.:</b>	<b>Drawing No.</b>

SL No.	Description	Specification	Observation	Remarks
1.	Paper Thickness			
2.	Plate Dimension			
3.	Plate Material			
4.	Water Proofing			
5.	Printing Quality			

<b>Remarks on overall quality:</b>
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\_\_\_\_\_  
*Signature of the Inspector*

\_\_\_\_\_  
*Signature of the HOD  
QA&I*

Figure 3: Internal Inspection Report Format

requested to fill up and send the feedback form by email. Gifts were allotted to the top ten best suggestion givers, ensuring the most accurate reply from the customers. The collected feedback forms are then analyzed for decision-making (i.e. the PLAN step of the PDCA cycle). Most of the forms were suggested to improve the packing quality of the plates to protect the plates from damage due to transport. Hence it was decided to use 350GSM papers for the making of the packing box. A fashion designer was also hired who suggested some trending color patterns for printing on the plates. An internal and external inspection form was then prepared to ensure whether the produced plates were achieving the proper quality or not. And then the concept of the PDCA cycle and continuous improvement were discussed with the management of the



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company. The managers assured us that they would upgrade the current process by repeating the PDCA cycle again and again. After that significant growth has been observed in the last two financial quarters in terms of profit and sales volume proving the significance of TQM implementation for that SME.





## VII.CONCLUSION

SMEs are responsible for generating a major chunk of a country's nominal GDP and play a vital role in the creation of job opportunities. So we need to focus on the development of the SMEs, where TQM can emerge as a problem-solving approach. Implementation of TQM in SMEs does not demand any financial investment at first, we will just have to convert our normal approach to the TQM approach. Providing and spreading knowledge related to TQM within an SME can increase the quality of the end product or service as well as increase the quality of the employee's lifestyle. In this paper, the implementation procedure of TQM has been mentioned with a real-life case study showing the improvement of an SME in terms of quality, profitability, and reputation before and after applying TQM.

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