

UNIT II

QUALITY CIRCLES

What is Quality Circle?

The technique in which a group of employees use participant management to identify and solve problems with the performance or quality of a product is known as **Quality Circle**. In this, small teams of employees meet to discuss, evaluate, and solve problems related to quality in an organisation. It is an essential component of enterprise management, in which small groups of six to twelve people volunteer to improve the employee's quality of work life while simultaneously increasing productivity, quality, and overall organisational performance. Using this technique, the employees can work with complete dedication and commitment by reducing mental tension, and the rate of rejection, rework, and solving work-related challenges.

Importance of Quality Control Circle

Quality Circle focuses on improving quality control by capitalising on employee's strengths and abilities and also helps in improving the overall productivity of the organisation. The following are some benefits of the Quality Control Circle:

- 1. Reduction of Costs:** By adapting the quality circle approach, businesses work on addressing their inefficiency which can help reduce waste and operational costs.
- 2. Better Quality:** Quality Circle teams actively take part in identifying and resolving quality-related problems, which results in higher-quality goods and services.
- 3. Increased Productivity:** The members of quality circle collectively work to eliminate bottlenecks in the process resulting in higher productivity and more effective operations.
- 4. Improvement in Work-life Balance:** The quality circle result in a better working environment, better relationships, and greater satisfaction with work, in addition to enhancing team culture and attitudes.
- 5. Promoting Innovation:** The members of quality circle works on finding innovative solutions to ongoing problems which can ultimately lead to organisational innovation.

Features of Quality Circle

- 1. Voluntary Group:** A quality circle is a voluntary group of employees that is formed for a common cause. In this, no member is forced to join using coercion or pressure. Also, no member may be prevented from participating in quality circles.

2. Participative Program: This is a collective effort to solve a problem. Members are free to express what's in their minds without any fear of peer judgment. Every team member participates in the projects and receives recognition collectively.

3. Improvement of Performance: The collective approach results in the improvement of quality, productivity, and overall performance. In addition, quality circles also reduce the cost and level of wastage.

4. Periodic Meetings: The members of quality circles meet frequently to solve the quality-related problems of the organisation.

5. Works for a Particular Agenda: Each Quality circle team has its specific agenda. It has its problems and provides solutions for the same.

6. Problem-Solving: Problem-Solving technique is adopted to identify and solve the problem related to the quality, defects, or inefficiencies in the process.

7. Improved Employee Engagement: The employees are the assets of the organisation. Thus, it is important to satisfy them. The quality circles engage them in the decision-making process which ultimately increases the satisfaction of the employees.

8. Training: Training is provided to the team members so that they can understand their objectives, roles, and responsibilities and work for improvement. They are also trained in various methodologies like teamwork, communication skills and problem-solving techniques, etc.

Objectives of Quality Circle

The main objectives of quality circle are:

1. Skill Development: Quality Circles result in the skill enhancement of the members by engaging them in problem-solving, team building, and open communication.

2. Quality Improvement: The quality circle aims to improve the quality by working on good communication skills, promoting problem-solving techniques, and using standardisation for continuous improvement.

3. Employee Satisfaction: Satisfied employees create a happy work environment. To satisfy them, recognition technique such as quality circles can be used. It gives the employees a sense of achievement which promotes job satisfaction, enthusiasm, and motivation.

4. Relationship Management: Quality Circles aim to maintain good relations between the employees and managers and to create cordial working relations.

5. Cost Reduction: Quality Circles work on improving the product's quality and reducing the per-unit cost of the output.

6. Achievement of Objectives: The main aim of the quality circle is usually aligned with the broader objectives of organisation. Their efforts collectively contribute to promoting competitiveness and organisational success.

7. Innovation: The quality circle promotes creativity and experimentation. With experimentation, members can work on identifying creative solutions to problems that makes the organisation competitive in the market and make a positive business environment.

8. Customer Satisfaction: The quality circle mainly focuses on developing products and services that can increase the satisfaction of customers. The organisation can build customer trust by focusing on quality improvement, customer centricity.

Structure of Quality Circle

1. Steering Committee: It is supervised by a senior executive that includes representatives from human resources development and management at the top. This committee is in charge of creating and implementing various strategies and policies that guide the program in the proper direction.

2. Coordinator: The administrative officer in charge of monitoring tasks and managing the program is the coordinator.

3. Facilitator: This supervising officer works with the circle leaders to arrange the operations for several quality circles.

How does the Quality Circle Work?

The adoption of the quality circle approach includes the following steps:

1. First of all, training is provided to the employees for effective implementation of Quality Circle in the organisation. In this, employees are trained in several problem-solving tools and techniques, like 7 QC tools, 5 Whys Poka-Yoke, etc.

2. Then the Quality Circle team is formed. These are generally formed with 4 to 6 members. This team includes one supervisor, that usually acts as a facilitator. In addition, the team leader changes by rotation turn.

3. In the third step, the theme of Quality Circle is decided. It is very important to know the theme, as with this every member knows their work.

4. Generally, several projects come under one theme. The Quality Circle team has to select the project that comes first on a priority basis. The team works on that project and finds the solutions to the problems.

Process of Quality Circle

The process of Quality Circle is as follows:

- 1. Quality Circle Formation:** This includes forming a small group usually consisting of 6-10 members that can collectively work to improve the quality of their knowledge and skills.
- 2. Training:** Under this step, training is provided to the team members so that they can better understand their objectives, roles, and responsibilities and work for improvement. In addition, they are trained in various methodologies like teamwork, communication skills problem-solving techniques, etc.
- 3. Project Selection:** It includes the identification of areas that need improvement in the organisation. For this purpose, members conduct several brainstorming sessions and write down the ideas that can be selected based on their experiences and surveillance.
- 4. Problem Identification:** In this step, team members determine the nature and extent of quality-related problems. Data is collected and examined to identify the underlying causes of the problems. The organization uses several tools like problem-solving tools and techniques to identify causes of the problems.
- 5. Formulation of Solutions:** The group considers and generates potential solutions for the problems by analyzing each solution based on practicality, efficacy, and future impact. After this, the best solution among the various alternatives is selected.
- 6. Selection and Implementation:** After determining which solution is the most effective, the team develops an implementation strategy that includes defining steps, roles, and responsibilities. This plan is executed after monitoring the progress, communicating the plan to various stakeholders, and making required adjustments.
- 7. Review and Evaluation:** This includes identifying the deviations by comparing the actual results with the desired targets. The implementation of solution outcomes is reviewed, and required changes are made, if any.
- 8. Documentation:** In this step the entire process (problem statement, analysis, solutions, and implementation) is recorded and the lessons learned from the other departments in the organisation are shared.
- 9. Reward and Recognition:** Recognition plays an important role in acknowledging the efforts of the team members. Additionally, team members are motivated and encouraged for continuous improvement.
- 10. Standardisation:** Successful solutions are incorporated into existing processes with the aim of continuous improvement of quality.

Duties of Quality Circle Leader

The duties of a quality circle leader include:

1. Building trust with members and communicating freely about any challenges that arise.
2. Organising the discussions of the quality circle team.
3. Giving each member an equal chance for achievement.
4. Giving specific tasks to each member.
5. Collaborating with the facilitator.
6. Motivating team members to utilize their abilities and monitoring the work of each member.
7. Leading the group members in the appropriate direction.

Advantages of Quality Circle

1. Job Satisfaction: Every person has some psychological needs which include the need for recognition. It gives the employees a sense of achievement which promotes job satisfaction. Thus they work with more enthusiasm and motivation.

2. Waste Reduction: With this quality circle approach every team member works collectively and helps each other. This results in the reduction of waste, and saving of labor and time which ultimately leads to improvement of quality.

3. Team-Spirit: The quality circle develops team spirit among the quality circle members. It also creates a feeling of togetherness. With this, members help each other and solve each other's problems at work.

4. Reduces Grievances and Absenteeism: With quality circle, employees prefer to work rather than sit at home. They also enjoy their work and do not treat the work as a burden. This ultimately reduces the grievances of the employees.

5. Quality Improvement: It is the main aim of the quality circle to improve the quality by enhancing communication, promoting problem-solving techniques, and using standardisation as a benchmark.

Disadvantages of Quality Circle

1. Lack of Time: The employees feel that they are also occupied with their daily work and have to work overtime for the quality circle work. But with open communication, the managers can make them understand that by giving some extra time in the beginning, the employees can save money, reduce wastage, and improve quality by adopting this approach.

2. Lack of Ability: Indian workers lack initiative and a high degree of education. People are unwilling to explore new things because they don't change. They must be educated about the advantages of high-quality circles.

3. Lack of Supervision Commitment: The dedication and support of upper management are essential to any program's success. Employees will be ready to allocate their time to quality circles if they don't get top support. However, it's possible that workers won't be permitted to have quality circle meetings during business hours. It is therefore impossible for quality circles to function effectively without the commitment and involvement of top management.

4. Limited Scope: Quality Circles works for specific issues in the organisation. This approach can be effective for solving these problems, but it can ignore border problems that require comprehensive solution. Thus the scope of quality circle is limited.

5. Limited Management Support: The implementation of a quality circle requires continuous support and commitment from the management. But if there is limited support, then members have to face challenges in conquering barriers, obtaining resources, and improving employee engagement in the long term.

Developing a Quality Circle

1. Initial Stage: The employees within the organisation must be aware of the quality circle concept. Everyone needs to know the basic implications and impact on the members and the business. The participation of employees in this quality circle team is voluntary. Individuals won't be enthusiastic about joining until they start understanding its fundamental concepts. The business can help the interested person by providing the necessary training to improve and enhance their participation skills.

2. Quality Circle's Constitution: Members of the quality circle are volunteers who are part of the same work area. The steering committee, coordinators, facilitators, leaders, and circle members who work for the company's ultimate benefit are all listed in the constitution.

3. First-hand Solution to a Problem: To solve problems, information must be collected through self-suggestions, contacting employees, and record-keeping. It also consists of data analysis that determines the cause of the problem. The final activity is problem-solving, and it calls for regular participation from members so they can provide their ideas and useful suggestions.

4. Presentation and Approval: The group members give the management the solution, orally or in the form of a project report or assignment. For the employees and management to work together in the future, the presentation improves communication among them.

5. Implementation: Implementation is the last step in creating a quality circle. This includes delegating important tasks to the appropriate groups based on suggestions to create a realistic quality circle.

Techniques used in a Quality Circle

1. Brainstorming: The technique encourages the generation of as many new ideas as possible that can help in the decision-making process. This creates a discussion environment in which everyone is free to give ideas without any fear of criticism. These employees feel free to express themselves and promote creative thinking. The ideas are recorded simultaneously. After that, the pros and cons of every idea are discussed before making a final decision.

2. Sampling and Charting Method: This method includes observation of the events and their outputs by the members of quality circle. The results can be positive or negative. The members chart out every observation they have made, either chronologically or according to some other relationship, which gives a clear idea of the problem.

3. Cause and Effect Diagrams: This method includes finding out the root cause of the problems. After this, the effect of that root cause is identified. Later, the members identify other causes and effects. This technique is also known as the **fishbone diagram**, as it lists out the root and causes resembling fishbone.

Introduction to Deming's 14 Points

W. Edwards Deming's contributions to Total Quality Management (TQM) stand out as truly revolutionary. Deming, an American statistician and management consultant, played a pivotal role in Japan's economic revival post-World War II.

His philosophy, encapsulated in his 14 Points, forms the bedrock of TQM and continues to shape modern quality management practices.

Deming's approach to quality was holistic, emphasizing the importance of systems thinking and continuous improvement.

This philosophy aligns closely with methodologies like Six Sigma, where professionals often pursue Six Sigma certification to master data-driven problem-solving and process optimization.

Deming's 14 Points, The System of Profound Knowledge

Deming's 14 Points are an outgrowth of what Deming called the "**System of Profound Knowledge**".

This system comprises four interrelated components: appreciation for a system, knowledge about variation, theory of knowledge, and psychology.

1. **Appreciation for a system:** This involves understanding how different parts of an organization interact and affect each other.
2. **Knowledge about variation:** Recognizing the difference between common and special causes of variation in processes.
3. **Theory of knowledge:** Understanding how we learn and make decisions based on data.
4. **Psychology:** Recognizing human behavior and motivation in the workplace.

These components form the philosophical foundation for Deming's 14 Points, providing a framework for transforming management practices and organizational culture.

Deming's 14 Points Explained

Now, let's see the Deming's 14 Points. As we explore these principles.

1. Create Constancy of Purpose

This point emphasizes the importance of long-term planning and vision.

Clear, consistent purpose can drive innovation and improvement. It's about focusing on becoming competitive, staying in business, and providing jobs, rather than short-term profits.

2. Adopt the New Philosophy

This principle calls for a fundamental shift in thinking. It's about embracing quality as a core value, not just a department or initiative.

3. Cease Dependence on Inspection

Deming argued that quality should be built into the process, not inspected after the fact.

This aligns closely with methodologies emphasized in six sigma certification programs, which focus on building quality into the process through improvement and statistical process control, rather than relying solely on inspection.

By focusing on prevention rather than detection, we can significantly reduce defects and improve overall quality, a skillset developed through root cause analysis training to identify and address process inefficiencies at their source.

4. End the Practice of Awarding Business on Price Alone

This point stresses the importance of building long-term relationships with suppliers based on quality and trust, not just price.

This approach can lead to more consistent quality and lower total costs in the long run.

5. Improve Constantly and Forever

Continuous improvement is at the heart of both Deming's philosophy and Six Sigma, and earning a six sigma green belt certification equips professionals with the tools to consistently enhance processes and products.

It's about never being satisfied with the status quo and always looking for ways to enhance processes and products.

6. Institute Training on the Job

Effective training is crucial for quality improvement. This can range from foundational awareness programs, like those covered in Six Sigma White Belt certification or a Lean Introduction, to more involved, job-specific training to ensure everyone understands their role in the quality system.

Well-designed, job-specific training can dramatically improve performance and reduce errors.

7. Institute Leadership

Deming emphasized that managers should be leaders, not just supervisors.

This involves understanding the work being done, providing support, and fostering an environment of continuous learning and improvement.

8. Drive Out Fear

Fear stifles innovation and honest communication.

Creating a culture where employees feel safe to speak up and take calculated risks is essential for true quality improvement.

9. Break Down Barriers Between Departments

Silos can be a major obstacle to quality improvement. In my work on cross-functional projects, breaking down these barriers can lead to better communication, more efficient processes, and higher quality outputs, principles that are central to the fundamentals of lean and support cross-functional collaboration.

10. Eliminate Slogans and Exhortations

Deming argued that slogans without substantive support can be demoralizing.

Instead, focus on providing the tools and resources necessary for employees to do their best work.

11. Eliminate Numerical Quotas

Arbitrary quotas can lead to poor quality and low morale. Instead, focus on improving processes and providing the support necessary to achieve high-quality results.

12. Remove Barriers to Pride of Workmanship

Employees should be able to take pride in their work. This means removing obstacles that prevent them from doing their best, whether it's outdated equipment, poor training, or ineffective management practices.

13. Institute a Vigorous Program of Education and Self-improvement

Continuous learning is essential in this business environment.

Ongoing education can drive innovation and improve quality.

14. Put Everybody in the Company to Work Accomplishing the Transformation

Quality improvement is everyone's responsibility.

This point emphasizes the need for a company-wide commitment to transformation and continuous improvement.

Implementing Deming's 14 Points in Modern Organizations

Implementing Deming's principles can be challenging, particularly in organizations with entrenched cultures.

Common obstacles include resistance to change, short-term thinking, and a lack of leadership buy-in.

Best Practices for Successful Implementation of Deming's 14 Points

Successful implementation of Deming's 14 points requires a systematic approach.

Based on my experience, some best practices include:

1. Start with leadership education and buy-in
2. Develop a clear implementation plan
3. Provide comprehensive training at all levels
4. Use data-driven decision making
5. Celebrate small wins to build momentum
6. Continuously assess and adjust the implementation strategy

Impact of Deming's 14 Points on Business Management

Deming's 14 Points have had a profound impact on the development of Total Quality Management and continuous improvement methodologies like Six Sigma.

They've shifted focus from inspection to prevention, emphasized the importance of systems thinking, and highlighted the critical role of leadership in quality management.

Long-term Effects of Deming's 14 Points on Organizational Culture and Performance

Organizations that successfully implement Deming's 14 points often see significant improvements in quality, productivity, and employee satisfaction.

These principles can transform organizational culture, fostering innovation, collaboration, and a genuine commitment to quality.

The Enduring Relevance of Deming's 14 Points

Deming's 14 Points continue to be relevant today.

They provide a comprehensive framework for quality management that goes beyond mere tools and techniques, addressing fundamental issues of leadership, culture, and systems thinking.

Future of quality management in light of Deming's 14 Points

As we look to the future, Deming's principles will continue to shape quality management practices.

The emphasis on continuous improvement, data-driven decision making, and systems thinking aligns well with emerging trends in technology and management.

While the specific tools and techniques may evolve, the fundamental principles outlined in Deming's 14 Points will continue to guide organizations in their pursuit of excellence.

As quality professionals, it's our responsibility to understand, apply, and evolve these principles to meet the challenges of the future.