

Quality Movement

Emphasis on quality, customer satisfaction, viewing the manufacturing process as a system

Quality Issues Old or New

- Nowadays, I make it a practice to call them into consultation on any new work-- I observe that they are more willing to set about a piece of work on which their opinions have been asked and their advice followed.

—Roman Landlord, Circa 1000 A. D.

Performance

- Recall the Surgeons evaluation problem?
- What were the components of performance?

Quality Management

- Edwards Deming
- Joseph Juran
- Kaoru Ishikawa (The focus is on the preservation and health of the organization.)

Focus

- Quality
- People
- Organization and processes
- Senior management (leadership)-quality is the ultimate responsibility of management
- Necessity of data to make good decisions
- Focusing on the customer

Process

- Work effectiveness (performance) is a function of the quality systems that management creates
- Improving the work flow and processes
- Understanding the nature of variability in quality
- Root causes of problems

General Principles

- Continuously evaluate new and old solutions
- Always look for improvements in the processes (linear and non-linear)
- Reconsider emerging technologies
- Anticipate rather than react to problems
- Understand the process and its variability
- Customer Added Value– the best Quality for money

A bit of History

- Both Juran and Deming worked for Shewhart at the Hawthorne Works of Western Electric in the 1920's.
- There they became familiar with Shewhart's statistical methods for quality.
- Shewhart's Cycle: Plan, Do, Study, and Act. The focus is on understanding and improving the production process.

Juran and Deming's reaction to Taylor and Ford

- Taylor and Ford's focus on task separation forgetting coordination.
- Juran and Deming view the corporation as an open system. The emphasis is on how the parts work together. They also point out that Taylor and Ford's management principles do not take the employees into consideration.

Juran Quality Principles

- Four components of quality: quality design, conformance to consumer needs, availability, & field service.
- To obtain quality, we must plan for quality, control quality, and improve quality.
- Most quality problems are the result of a few causes.
- All systems have variability-- to improve quality we must reduce variability.

Juran 85/15 Rule

- There is a widely held belief that an organization would have few, if any, problems if only the workers do their jobs correctly.
- This belief is incorrect.
- The potential to eliminate mistakes lies mostly in improving the system through which work is done.
- As a rule of thumb, 85% of the problems can be corrected by changing the system, less than 15% are under the worker's control.

The Pareto Principle

- 80% of the trouble comes from 20% of the problems.
- Concentrate on the 'vital few' sources of problems and not be distracted by those lesser importance.

Solving Problems Without Creating New Ones

- Finding a solution is terrific, but if we implemented it haphazardly, we could get into bigger trouble than we were before.
- The solution may only partially solve the problem, even worse, it may trigger other problems.

Deming 14 Points

- Create a constancy of purpose for improvement
- Adopt the philosophy of quality
- Cease dependence on mass inspection
- End the practice of awarding business on the basis of price tag alone
- Improve constantly the system of production
 - Processes
 - Selection and placement of people
 - training

Deming 14 Points

- Institute training to use people's abilities
- Institute leadership
- Drive out Fear
- Break down barriers between staff areas
- Eliminate slogans and numerical quotas
- Remove barriers that rob people of their pride
- Encourage education and self-improvement
- Take action

Identifying a Solution

- Cause-and-effect diagrams
- Flow charts
- Statistical Data
 - Run charts (time)
 - Pareto charts
 - Histograms
 - Control charts (variability and outliers)

Implementing an Idea

- List of actions to be taken
- Methods for accomplishing the actions
- Resources needed
- Special needs for these actions
- Time requirements
- People involved and responsible

Attributes of Successful Companies-- Swartz

- They go further than defending the markets--they attack competitors.
- They respond faster, provide more quality for price & offer more value for the price than competitors.
- They are flexible and anticipate change.
- They are dedicated to changing themselves.

Attributes of Successful Companies-- Swartz

- They identify performance gaps.
- They search continuously for knowledge that will improve their competitiveness.
- They have a continuous improvement process which requires that everyone be dedicated to learning & improvement.

Swartz's Quality Guidelines

- Reduce Inventory
- Cut down on response time
- Cut down waste of time and material
- Reduce work in process
 - Examine the process for valueless activities
- Improve the process
 - You learn to hit by improving the swing not by watching the score board

Swartz

- Increase parallel production
- Keep in mind capacity versus demand
- Go beyond market expectations
- Increase quality and decrease quality variance
- Increase learning
- Take care to discover the customer's expectations

Swartz

- Give first priority to redesigning the delivery system that has the highest impact on the future of the business
- A system is optimized by optimizing the whole, not by optimizing its parts.
- Transform yourself in order to maximize the rate and quality of learning and improvement.