Some people view quality as 'performance to standards'. Others view it as 'meeting the customer’s needs' or 'satisfying the customer' (Reid and Sanders)
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Introduction

Quality is one of the five 'golden' metrics used to measure performance: the remaining four are total cost, total cycle time, delivery performance and safety (Cane, 2011).

The idea of quality management has been around since the 1920s. Pioneered by Frederick Taylor (also known as the father of scientific management) the field was further developed by W. Edward Deming, Joseph M. Juran and Philip B. Crosby. After World War II, American companies were successfully manufacturing and selling their products, production numbers continued to grow and the quality measures started to fall short. Japan, on the other hand, was dealing with the devastation faced in World War II. In their efforts to recover, Japanese companies developed manufacturing practices with far better quality controls in place and invited foreign experts to share their insights and rebuild the Japanese industrial world. By the 1980s the tide turned and the Japanese started capturing the American market as well (Encyclopedia of Management, 2006).

Today, quality management is embedded in a number of famous process improvement programmes such as Total Quality Management, Six Sigma, Lean production. These quality improvement programmes help companies achieve significant benefits, including lower costs, faster time-to-market and better customer experiences (Power, 2010). Total quality management, pioneered in the USA by Deming, refers to an integrated effort designed to improve quality performance at every organisational level (Reid and Sanders, 2010). Six Sigma, developed under Mr Galvin of Motorola in the 1970s, focuses on improving quality and eliminating defects and was chosen as the process improvement technique for large companies in the 1990s (Dembosky and Nuttall, 2011; Hill, 2011). Lean production is used to shave inventories to the minimum and push parts through the system as fast as possible to cope with sudden variations in demand (Marsh, 2011).

Definition

Quality management overlooks all activities of the organisation "that determine quality policies, objectives and responsibilities so that the project would satisfy needs for which it was undertaken" (Project Management Institute). Quality management generally incorporates four processes: quality planning, quality assurance, quality control and quality improvement.

Successful Application

There are three observations on successful implementation of quality management: quality, teamwork and process improvement. Some factors that can prevent sustainable process improvement include competing demands for attention, competing mindsets and behaviours (e.g. work harder vs. work smarter), strategic irrelevance, traditional management processes and 'the pain' of disruption (Power, 2010).

Steps to Successful Application

- Create a plan; publish the aims and purposes of the organisation
- Learn and adopt the new philosophy of quality.
- Understand the purpose of inspection; stop depending on inspection.
- Stop awarding business based on price alone
- Improve the system constantly.
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- Institute training.
- Teach and institute leadership.
- Drive out fear, create trust, and create a climate for innovation.
- Optimise the efforts of teams, groups and staff areas.
- Eliminate exhortations, and targets for the workforce; provide methods of achievement.
- Eliminate numerical quotas for the work force.
- Remove barriers that rob people of pride for workmanship.
- Encourage education and self-improvement for everyone.
- Make action to accomplish the transformation, make it everyone’s job.

Deming (1986)

Hints and Tips

- The heads of businesses should take ownership of all the quality improvement initiatives and be a part of the process (Joseph et al., 1999).
- Many companies who launch process improvement programmes reap significant benefits (e.g. lower costs, faster time-to-market, and better customer experiences). However, they quickly give up and get 'flabby' again. To be competitive it is important to keep organisations fit and make improvement a habit (Power, 2010).
- It is important to know how well the process is doing by benchmarking against other organisations, not by measuring against yourself (Likierman, 2009).
- Process management should ensure that everyone is concerned with quality, not just the inspection team (Joseph et al., 1999).
- A study by Ernst and Young highlights the importance of quality control across industries today. This study, carried out in 2005, reports that 14% of public companies exhibit ineffective internal controls that result in output errors and elongated cycle times aside from inevitable cost overruns (Cited in Juras et al., 2007).

Potential Advantages

- Quality management is an effective model to achieve the highest level of customer service (Feigenbaum, 2002).
- Quality management can help organisations achieve market success as it focuses on employee satisfaction and continuous improvement, thus ensuring continued growth of business (Feigenbaum, 2002).
- The concept facilitates the understanding of quality in the marketplace. Instead of confusing it with technological and developer specifications, quality simply means the specifications as demanded by the customer (Sommerville, 2004).

Potential Disadvantages

- Small companies often fail to comply with quality standards (Yusof and Aspinwall, 2000).
- A lot of data must be recorded in order to track quality progress and it is often a time-consuming activity (Yusof and Aspinwall, 2000).
- The need to create more documentation generates more paperwork and bureaucracy which is seen as another major drawback of applying quality management tools (Yusof and Aspinwall, 2000).
Performance Monitoring

- Statistical process control (SPC): part of the six-sigma process, plots every observation on a graph and sees how many are lying outside of control limits (Statit Customer QC Overview, 2007).
- Flowcharts: a visual representation of how processes are flowing into each other, helps to identify where exactly in the process is there a problem (Statit Customer QC Overview, 2007).
- Pareto Charts: a bar graph that depicts those 20% of issues that are giving rise to 80% of problems, operates on a simple 80-20 principle (Statit Customer QC Overview, 2007).
- Employees: customer-facing, frontline employees are a great source of customer feedback that is a direct reflection of the quality of service/product offered by the company (Statit Customer QC Overview, 2007).

Case Studies

- In order to control for quality Wipro implemented six-sigma technique (which aims to assure close to zero effects and have no more than 0.0000034% of defects). When applied to data transfer, Wipro’s quality management helped to reduce an 18 minute transfer by 2-3 minutes, achieving an improvement of 250% (the goal was 200%), lowering the cost of ownership by up to 40% and increasing productivity by up to 30% (Sharma et al., 2008).
- IBM’s Tivoli Provisioning Manager software underwent a quality management process in order to ensure quality. Its test run showed a 94% reduction in attended time with more than 1,200 person-hours saved over the first seven months of the project. IBM also registered savings of US$2m (Gauttam, 2010).
- Between 1990 and 1999 when Wiremold was under new management focused on lean production, the company achieved increases in its stock by 32% per year, the sales per employee rose from US$92,000 to US$241,000, inventory turnover grew from 3.4 to 15.8, and new product development cycle time declined from 2-3 years to 3-12 months. Then in 2000 Wiremold was acquired by Legrand, a French manufacturer of electrical equipment, committed to batch production and standard cost accounting. In a few years lean processes completely unwound (Power, 2010).

Further Reading/References

Web Resources

- Gillette and TQM http://hbr.org/product/quality-at-gillette-argentina/an/BAB003-PDF-ENG
- The pioneers of quality management movement http://www.enotes.com/topics/quality-gurus
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Books

- E-book - TQM as an essential tool
- Quality management in totality
- Management, organisation and strategy - relation to TQM

References

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**Video**

Quality management
https://www.youtube.com/watch?feature=player_embedded&v=QJNVrY_Z2NM