

Chapter -3- Quality Gurus and their Vision

3.3-W. Edwards Deming-

Dr. Deming is credited with having a profound influence on Japan's rise to economic prominence after the Second World War, and he is still remembered through the Deming Prize for Total Quality Management.

Deming's 14 Points Explained and Implementation:

1. **Constancy of purpose:** Create constancy of purpose for continual improvement of products and service to society, allocating resources to provide for long range needs rather than only short term profitability, with a plan to become competitive, to stay in business, and to provide jobs.
2. **The new philosophy:** Adopt the new philosophy. We are in a new economic age, created in Japan. We can no longer live with commonly accepted levels of delays, mistakes, defective materials and defective workmanship. Transformation of Western management style is necessary to halt the continued decline of business and industry.
3. **Cease dependence on mass inspection:** Eliminate the need for mass inspection as the way of life to achieve quality by building quality into the product in the first place. Require statistical evidence of built in quality in both manufacturing and purchasing functions.
4. **End lowest tender contracts:** End the practice of awarding business solely on the basis of price tag. Instead require meaningful measures of quality along with price. Reduce the number of suppliers for the same item by eliminating those that do not qualify with statistical and other evidence of quality. The aim is to minimize total cost, not merely initial cost, by minimizing variation. This may be achieved by moving toward a single supplier for any one item, on a long term relationship of loyalty and trust. Purchasing managers have a new job, and must learn it.
5. **Improve every process:** Improve constantly and forever every process for planning, production, and service. Search continually for problems in order to improve every activity in the company, to improve quality and productivity, and thus to constantly decrease costs. Institute innovation and constant improvement of product, service, and process. It is management's job to work continually on the system (design, incoming materials, maintenance, improvement of machines, supervision, training, retraining).
6. **Institute training on the job:** Institute modern methods of training on the job for all, including management, to make better use of every employee. New skills are required to keep up with changes in materials, methods, product and service design, machinery, techniques, and service.
7. **Institute leadership:** Adopt and institute leadership aimed at helping people do a better job. The responsibility of managers and supervisors must be changed from sheer numbers to quality. Improvement of quality will automatically improve productivity. Management must ensure that immediate action is taken on reports of inherited defects, maintenance

requirements, poor tools, fuzzy operational definitions, and all conditions detrimental to quality.

8. Drive out fear: Encourage effective two way communication and other means to drive out fear throughout the organization so that everybody may work effectively and more productively for the company.
9. Break down barriers: Break down barriers between departments and staff areas. People in different areas, such as Leasing, Maintenance, Administration, must work in teams to tackle problems that may be encountered with products or service.
10. Eliminate exhortations: Eliminate the use of slogans, posters and exhortations for the work force, demanding Zero Defects and new levels of productivity, without providing methods. Such exhortations only create adversarial relationships; the bulk of the causes of low quality and low productivity belong to the system, and thus lie beyond the power of the work force.
11. Eliminate arbitrary numerical targets: Eliminate work standards that prescribe quotas for the work force and numerical goals for people in management. Substitute aids and helpful leadership in order to achieve continual improvement of quality and productivity.
12. Permit pride of workmanship: Remove the barriers that rob hourly workers, and people in management, of their right to pride of workmanship. This implies, among other things, abolition of the annual merit rating (appraisal of performance) and of Management by Objective. Again, the responsibility of managers, supervisors, foremen must be changed from sheer numbers to quality.
13. Encourage education: Institute a vigorous program of education, and encourage self improvement for everyone. What an organization needs is not just good people; it needs people that are improving with education. Advances in competitive position will have their roots in knowledge.
14. Top management commitment and action: Clearly define top management's permanent commitment to ever improving quality and productivity, and their obligation to implement all of these principles. Indeed, it is not enough that top management commit themselves for life to quality and productivity. They must know what it is that they are committed to-that is, what they must do.

PDCA cycle-Explained briefly, Plan-Do-Check-Act cycle is a model for carrying out change. It is an essential part of the lean manufacturing philosophy and a key prerequisite for continuous improvement of people and processes. First, proposed by Walter Shewhart and later developed by William Deming, PDCA cycle became a widespread framework for constant improvements in manufacturing, management, and other areas. PDCA is a simple four-stage method that enables teams to avoid recurring mistakes and improve processes.

3.2 Phillip B. Crosby –

Philip B. Crosby is another recognized guru in the area of TQM. He worked in the area of quality for many years, first at Martin Marietta and then, in the 1970s, as the vice president for quality at ITT. He developed the phrase “Do it right the first time” and the notion of zero defects, arguing that no amount of defects should be considered acceptable.

Crosby’s principles-

- Philip B. Crosby is one of the American quality gurus who rose to international fame thanks to his teachings on quality management.
- Crosby has taught thousands of company executives and is best known in relation to the concepts of Zero Defects (ZD) and “Do it right first time.”
- Crosby has written a number of books. Of these, Quality is Free is the most popular one, having sold over a million copies.

Crosby's Absolutes (principles) for Quality Management-

First Absolute-- The Definition of Quality is Conformance to Requirements, not Goodness

This very specific definition of quality leaves very little open, which is probably what Crosby intends. According to him, once the requirements are specified, then quality is judged solely on the criteria of whether it is met or not. Aesthetics or feelings do not come into it. It is then the duty of management to specify those requirements very clearly to say what they want and this Crosby believes is one of the major failings of management. Of course, if management does not decide what is needed then by default, operators are going to have to make that decision for the company.

The definition of quality can never make any sense unless it is based on exactly what the customer wants. A product is a quality product only when it conforms to the customer's requirements. Of course, these requirements should be made known to the workforce, which should be provided with adequate tools to achieve them. Consequently, the management has the following three tasks to perform:

1. Establish the requirements to be met and communicate them to the employees
2. Provide the appropriate tools and techniques and the necessary training in them
3. Provide continuous support and encouragement

Second Absolute-- The System of Quality is Prevention In other words, prevention is better than detection or appraisal.

This is very much in line with the philosophy behind SPC-- understand the process, look at what can go wrong and takes preventive actions before the process begins to deal with customers. The

secret of success is to study the process and perform some sort of risk analysis, i.e. identify opportunities for error. Something can then be done so that the error is avoided. Contingency plans can also be drawn up so that if a problem materializes, the damage is controlled and restricted to the minimum possible. A company which relies on mass inspection of the final output to improve quality is doomed to stagnation. The only prerequisite of prevention is an understanding of the process. Implementation of SPC can provide the understanding needed. One can then immediately know what to do to prevent rather than inspect, appraise or test.

Third Absolute-- The Performance Standard is Zero Defects Here Crosby is stating that nothing less than perfect quality has to be the aim.

Setting targets below 100 per cent is the start of a downward spiral. And error-free products are possible which has been proven by Japanese industry. It is not, therefore, unreasonable to expect a level of zero defects and the quality tools for achieving it do exist. The Crosby view is now supported by a developing view that prevention costs, particularly where “total quality” is in place, do not necessarily rise massively as one approaches zero defects. But, in fact, these rise by no more than failure costs fall. In other words, zero defects may well be optimal from a cost point of view. But again, it comes back to getting the requirements right in the first place.

Fourth Absolute-- The Measurement of Quality is the Price of Non-Conformance In order to attract the attention of senior management, quality has to be measured in financial terms. This is how quality can become a management function and not just a technical term that is measured for the cost consequences involved in doing things wrong (due to rejects, reworking, warranty costs etc.). These can very well represent 20-40% of the total operating costs. This is the Price of Non-Conformance (PONC) which is mainly the result of not doing things right first time.

Crosby 14 Steps to Quality Management-

Crosby introduced a tool of fourteen steps of quality improvement. The aim of quality improvement program (QIP) is to set preplanned objectives which help an organization when it comes to quality management. Crosby 14 steps to quality management are-

Management commitment Top Management must committed to quality and communicated downward their understandings by written policy. Everyone is expected to perform according to the requirements of the company and the customers need.

Quality improvement team Figure out a team of department head to oversee and judge improvement in their concern departments and in the company as a whole.

Quality measurement Certain measurement should establish appropriate to all the activities in order to identify areas where improvement in needed.

Cost of quality Estimation the costs of quality in order to point out areas where improvement would be profitable.

Quality awareness Employees are the backbone of any process or change. Manage must raise quality awareness among employees. They must know the importance of product performance and cost of non-conformance.

Corrective action Take positive and correct steps to solve the problems identified from previous steps.

Zero defects planning. Figure out a committee, which will plan program suitable to the company and its culture.

Supervisor training A training program should in place for all levels of management that how to implement their part in the quality improvement program.

Zero defect day Schedule a day to indicate employees that the company has a new standard.

Goal setting Individuals should establish improvement goals for themselves as well as for their groups.

Error causes removal If any problem that prevents employees from performing error free work there should be clean policy to inform top management.

Recognition Those who meet their goals efficiently and effectively, they must be rewarded.

Quality counsel Consist of quality professionals and team leaders, quality councils should meet on regular basis to share their experiences, problems and ideas

Do it all over again Repeat again and again step 1 to 13 and emphasis a continuous process of quality improvement.

Dr. Joseph Juran-

The Juran Trilogy was developed by Dr. Joseph Juran, and it's something I learned about recently in my Total Quality Management and Six Sigma course. The Juran Trilogy is an improvement cycle that is meant to reduce the cost of poor quality by planning quality into the product/process.

The Juran Trilogy

1. Quality Planning

In the planning stage, it is critical to define who your customers are and find out their needs (the "voice of the customer"). After you know what your customers need, you're able to define the requirements for your product/process/service/system, etc., and develop it. Additionally, any plans that might need to be transferred to operators or other key stakeholders should be done during the planning phase. Planning activities should be done with a multidisciplinary team, with all key stakeholders represented.

2. Quality Control

During the control phase, determine what you need to measure (what data do you need to know if your process is working?), and set a goal for your performance. Get feedback by measuring actual performance, and act on the gap between your performance and your goal. In Statistical

Process Control (SPC), there are several tools that could be used in the “control” phase of the Juran Trilogy: Pareto Analysis, flow diagrams, fishbone diagram, and control charts, to name a few.

3. Quality Improvement

There are four different “strategies” to improvement that could be applied during this phase:

- Repair: Reactive; fix what’s broken.
- Refinement: Proactive; continually improve a process that isn’t broken (like the continual pursuit of perfection in Lean!)
- Renovation: Improvement through innovation or technological advancement
- Reinvention: Most demanding approach; start over with a clean slate.

Juran developed the idea of **quality trilogy**: quality planning, quality improvement and quality control. These three aspects of company-wide strategic quality planning are further broken down in Juran's 'Quality Planning Road Map', into following key elements:

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| <p>Quality Planning</p> | <ul style="list-style-type: none"> • Identify who are the customers. • Determine the needs of those customers. • Translate those needs into our language. • Develop a product that can respond to those needs. • Optimize the product features so as to meet our needs and customer needs. |
| <p>Quality Improvement</p> | <ul style="list-style-type: none"> • Develop a process which is able to produce the product. • Optimize the process. |
| <p>Quality Control</p> | <ul style="list-style-type: none"> • Prove that the process can produce the product under operating conditions. • Transfer the process to Operations. |