A note on Quality; The views of Deming, Juran, and Crosby, Summary

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DEMING:

Deming blamed the failure of American companies on the poor management. He believed that management should improve productivity it will reduce rework and mistakes, reduces waste of man- power machines and material thus increase output with less effort, Other benefits of improved quality and lower cost, happier people on the job and more jobs, through better competitive position.

His message was clear that there need to be some radical changes in the functioning of the companies for any development in performance and quality.
For this to happen he challenged the entrenched notions such as quality and productivity involve a trade-off. He believed that the problems arise from two types of causes.

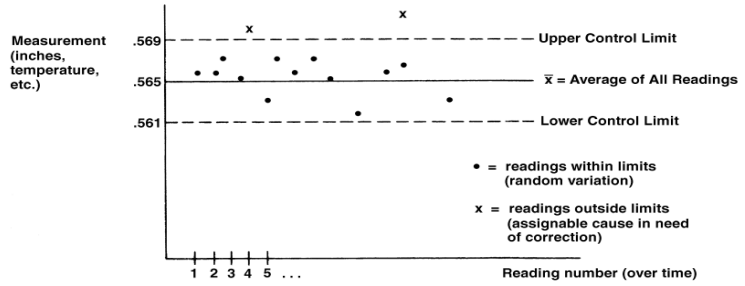
1. Common Cause
2. Special Cause

Common Causes are not related to operations and are basically the failure of top management to perform properly. It includes poor product design, incoming material unsuited to their use, machine out of order, improper bill of material, machine that would not hold tolerance, poor physical condition and so on.

Special Causes are the operational faults in the working. It includes lack of knowledge and skills, workers inattentions or a poor lot of incoming material.

The tool proposed by Deming to distinguish between common causes and special causes was statistical process control developed by Walter Shewart while at bell labs in the 1930s. It relied on fact that variation was inevitable in industrial life however through this tool it can be identified as to whether the variation was random or not. Probability rule determined that variation was random or not.

Figure A A Typical Control Chart



Readings that fell outside the accepted variation indicate a special cause one that requires an intervention. However, if the readings fall between the specified limits then the processes in conformation to the historical standards. However it does mean that the performance is ideal. There is a possibility that the system itself is not performing well over the years and development in entire process might be required. To improve the system itself, common causes had to be removed and it will shift the entire average up or down. Simply because a system was in a statistical control does not mean it was as good as it could be.

For all this he suggested implementation of various tools such as control charts, SPC, Pareto analysis, ishikawa cause and effect diagram among. Deming's highlighted the following points. In his seminars in America in 1980, he spoke of the need for 'the total transformation of "Western Style of Management" He produced his 14 Points for Management, in order to help people understand and implement the necessary transformation.

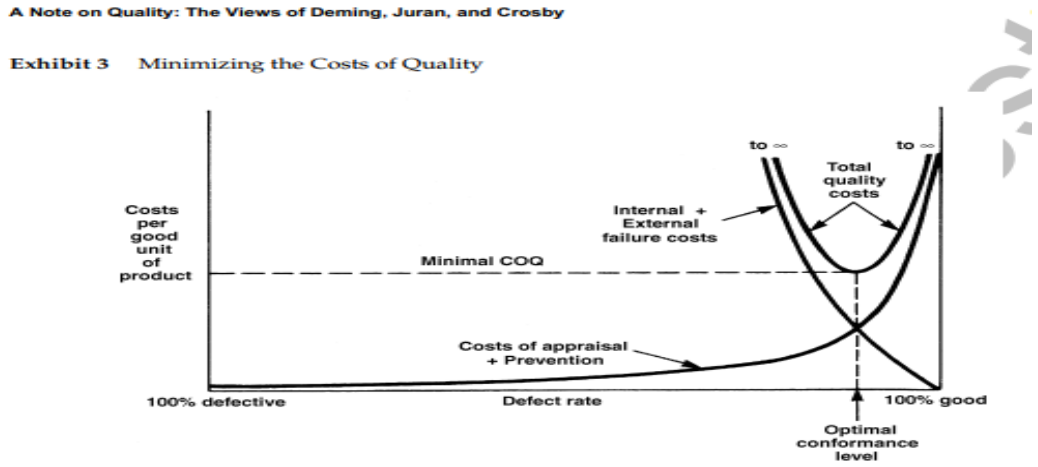
1. Create Consistency of purpose for improvement of product and services (improve all areas to best meet the needs of customers)
2. Adopt the new philosophy (poor work-machine, defective products, become unacceptable)
3. Cease dependence on mass inspection (The use of inspection to improve quality is costly and ineffective.
4. End the practice of awarding business on price tag alone (companies build long term relationships with suppliers. If Purchasers constantly asking for lowest pricing it will reduce quality, suppliers will be forced to cut the corners)
5. Constantly and forever improve the system of production and services (Start to improve the products or services lifecycle from concept to disposal)
6. Institute modern methods of training on the Job (everyone should trained to know the customers' requirements)
7. Institute modern methods of supervising
8. Drive out fear
9. Break down barriers between departments
10. Eliminate numerical goals for the work force
11. Eliminate work standards and standard quotas
12. Remove barriers that hinder the hourly workers
13. Institute a vigorous program of education and training
14. Create structure in top management that will push every day on the above 13 points.

JURAN'S:

Juran's defined quality as "Fitness to use" meaning that the user of product or service should be able to count on in what they want and when. For example a manufacturer should be able to process a purchased material or component in order to meet the demand of its customers, a wholesaler should receive a correctly labeled product free from damage during shipment. Fitness for use has five major dimensions quality of design, quality of conformance, availability, and safety (risk of injury due to product hazard) and filed use (Product condition after it reached customers hands). Juran's approaches to reliability provides representative example. He describes statistical methods for improving reliability included various types of failure rates. He established cost of quality accounting system. It provides management with a dollar cost for defective products, to keep improving quality until these was no longer a positive economic return.

Two assumptions were built preventive cost and appraisal cost. He defines three approaches breakthrough projects, the control sequence and annual quality program. In the early stage, when a firms failure cost greatly exceeded its prevention and appraisal cost there were greater chance of breakthrough project performance. After a successive breakthrough

projects a firm reached the point of optimal quality in juran's formulation the bottom of the COQ Curve. The organization then needed to employ the control sequence to preserve its gains.



Juran's 'Quality Planning Road Map' consists of the following steps:

1. breakthrough in attitude
2. Identify the vital few projects
3. Organize for breakthrough in knowledge
4. Conduct the analysis
5. Determine how to overcome resistance to change
6. Institute the change
7. Institute controls

CROSBY:

Philip Crosby has started his industry as an inspector. In 1979 he left ITT to found Philip Crosby Associates inc, along with college. Crosby directed his message to top management to change their perception and attitude towards quality. Typically, top management viewed quality as intangible or else to be found only in high-end products.

Crosby however spoke to quality as a **"Conformance to requirement**s" and believed that any product that constantly reproduced its design and specification was of high quality.

Ultimately the goal of quality improvements was zero defects, to be achieved through prevention rather than after-the-fact inspection. He believed that management should change their get them for workers would be similar expectation with their jobs, but if management established thinking. If management expected imperfection and defects, it would a higher standard of performance zero defects was possible. He provides two primary tools Cost of quality measure and the management maturity grids. Crosby offered 14 points for quality improvement. It emphasized prevention over detection.

The 14 Steps to Quality Improvement:

- **Step 1**: Management Commitment
- **Step 2**: Quality Improvement Team
- **Step 3**: Quality Measurement
- **Step 4**: Cost of Quality Evaluation

- **Step 5**: Quality Awareness
- **Step 6**: Corrective Action
- **Step 7**: Establish an Ad Hoc Committee for the Zero Defects Program
- **Step 8**: Supervisor Training
- **Step 9**: Zero Defects Day
- **Step 10**: Goal Setting
- **Step 11**: Error Cause Removal
- **Step 12**: Recognition
- **Step 13**: Quality Councils
- **Step 14**: Do It Over Again